

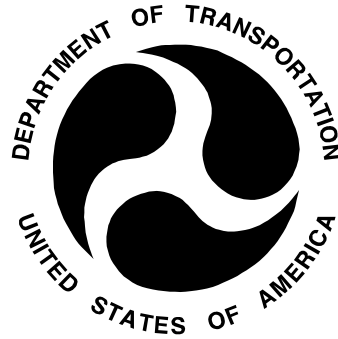
REPORT NO. NCAP-MGA-2001-005

NEW CAR ASSESSMENT PROGRAM (NCAP)

FRONTAL BARRIER IMPACT TEST

Ford Motor Company
2001 Lincoln Town Car 4 Door Sedan

MGA PROVING GROUNDS
5000 WARREN ROAD
BURLINGTON, WI 53105



Test Date: November 9, 2000

Report Date: November 15, 2000

FINAL REPORT

Prepared For:

**U. S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
SAFETY PERFORMANCE STANDARDS
OFFICE OF CRASHWORTHINESS STANDARDS
MAIL CODE NPS-10
400 SEVENTH STREET, SW, ROOM 5313
WASHINGTON, D.C. 20590**

TECHNICAL REPORT STANDARD TITLE PAGE

1. Report No. NCAP-MGA-2001-005	2. Government Accession No.	3. Recipient's Catalog No.	
4. Title and Subtitle NHTSA New Car Assessment Program (NCAP) Testing of a 2001 Lincoln Town Car 4 Door Sedan		5. Report Date November 15, 2000	
		6. Performing Organization Code MGA	
7. Author(s) Chris Havens		8. Performing Organization Report No. NCAP-MGA-2001-005	
9. Performing Organization Name and Address MGA Research Corporation 5000 Warren Road Burlington, WI 53105		10. Work Unit No.	
		11. Contract or Grant No.	
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Office of Crashworthiness Standards (Mail Code: NPS-10) 400 Seventh St., S.W., Room 5313 Washington, D.C. 20590		13. Type of Report and Period Covered Final Report	
		14. Sponsoring Agency Code	
15. Supplementary Notes			
16. Abstract A 56 kph (35 mph) frontal barrier impact using a rigid barrier was conducted on a 2001 Lincoln Town Car 4 Door Sedan in accordance with the specifications of the Office of Crashworthiness Standards Test Procedure No. TP-NCAP120199 for the determination of vehicle crashworthiness on November 9, 2000. The barrier impact velocity was 56.5 kph (35.1 mph), and the ambient temperature at the time of impact was 21.1°C. The post-test maximum static crush was 700 mm. The test vehicle appeared to comply with the requirements of the following Federal Motor Vehicle Safety Standards: 1. FMVSS 212, "Windshield Mounting" 2. FMVSS 219 (partial), "Windshield Zone Intrusion" 3. FMVSS 301, "Fuel System Integrity" With regard to "Occupant Crash Protection" injury criteria, the driver's HIC was 424 and the 3 msec. Clip (Chest g's) was 34 g's. The left and right femur loads for the driver were -4319 and -2825 Newtons, respectively. The passenger's HIC was 471 and the 3 msec Clip was 35 g's. The left and right femur maximum loads were -2107 and -1967 Newtons respectively.			
17. Key Words 35 mph Frontal Barrier Impact Test New Car Assessment Program (NCAP) FMVSS 212 Indicant Testing FMVSS 219 (partial) Indicant Testing FMVSS 301 Indicant Testing		18. Distribution Statement Copies of this report are available from: Technical Ref. Division, NHTSA, NASSIF Building, Room 5108 400 Seventh Street, S.W. Washington, D.C. 20590	
19. Security Classif. (of this report) Unclassified	20. Security Classif. (of this page) Unclassified	21. No. of Pages 319	22. Price

Form DOT F 1700.7 (8-69)

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PREPARED BY: _____
Chris Havens, Project Engineer
MGA Research Corporation

APPROVED BY: _____
Dave Winkelbauer, Facility Director
MGA Research Corporation

APPROVAL DATE: _____

TEST TECHNICIANS: Wayne Dahlke
Chris Novak
Erik Nelson
John Wistert
Carl Ford
John Slatner

CALIBRATION/INSTRUMENTATION: Tim Michnay

PHOTOGRAPHIC: Chris Kulis
Tammy Brausch

SECRETARY: Danielle Rames

FINAL REPORT ACCEPTED BY:

Manager, New Car Assess. Program (NCAP)

Date of Report Acceptance

Contracting Officer's Tech. Rep. (COTR)

Date of Report Acceptance

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SECTION 1

PURPOSE AND SUMMARY OF NCAP TEST

This 35 mph frontal barrier impact test is part of the Composite FY'01 Vehicle Barrier Impact Testing Program sponsored by the National Highway Traffic Safety Administration (NHTSA). The purpose of this test was to obtain vehicle crashworthiness and occupant restraint system performance data for an impact speed in excess of the current 48 kph (30 mph) FMVSS 208/212/219/301-75 requirements.

The 56 kph (35 mph) frontal barrier impact test was conducted in accordance with the National Highway Traffic Safety Administration (NHTSA) Indicant Test Procedure for New Car Assessment Program (NCAP) dated December 1, 1999. Data for FMVSS No. 212, "Windshield Mounting", FMVSS No. 219 (Partial), "Windshield Zone Intrusion", FMVSS No. 301-75, "Fuel System Integrity," as well as occupant performance data are provided herein.

A flat concrete barrier covered with 3/4" plywood was impacted by a 2001 Lincoln Town Car 4 Door Sedan at a velocity of 56.5 kph (35.1 mph). The test was performed at the MGA Proving Grounds and Crash Test Center on November 9, 2000. Pre- and post-test photographs of the vehicle and dummies can be found in Appendix A.

The frontal barrier impact event was documented by one (1) real-time camera and sixteen (16) high speed cameras. Camera locations and other pertinent camera information can be found in this report.

Two Part 572E, 50th percentile male anthropomorphic test devices (ATDs) were placed in the driver and right-front passenger seating positions according to dummy placement instructions specified in the Laboratory Indicant Test Procedure.

Both ATDs were instrumented with head and chest primary and redundant triaxial accelerometers, pelvis triaxial accelerometers, a chest displacement transducer, a six axis neck load cell, right/left femur load cells, right/left lower leg sensors, and right/left foot accelerometers. Seat belt load cells were also on the driver and passenger shoulder and lap

belts to measure dummy torso and pelvic section loading. Calibrated ATDs, driver (Serial No. 066), and the right front passenger (Serial No. 065), were used for this test. Certification details, along with instrumentation calibration data, are found in Appendices C and D.

The 97 channels of data were recorded on four (4) onboard DAS modules. Appendix B contains the vehicle and dummy response data traces.

The driver's head struck the inflated airbag. The driver HIC was 424 and the maximum chest (CLIP) deceleration over 3 milliseconds was 34 g's. The maximum chest compression was 31 mm. The left and right femur loads were -4319 and -2825 Newtons respectively.

The right front passenger's head struck the inflated airbag. The passenger HIC was 471 and maximum chest (CLIP) deceleration over 3 milliseconds was 35 g's. The maximum chest compression was 28 mm. The left and right femur loads were -2107 and -1967 Newtons respectively.

SECTION 2
OCCUPANT AND VEHICLE
INFORMATION/DATA SHEETS

DATA SHEET NO. 1
CRASH TEST SUMMARY

Vehicle Yr/Make/Model/Body Style: 2001 Lincoln Town Car 4-Door Sedan
VIN.: 1LNHM82W11Y633287

Vehicle Test Weight: 2111.1 kgs

Impact Velocity: 56.5 kph

Maximum Static Crush: 700 mm

Vehicle Rebound: 1052 mm

DUMMIES:	DRIVER	PASSENGER
Serial Number:	<u>066</u>	<u>065</u>
Restraint System:	<u>Type II seat belts</u> <u>and frontal airbag</u>	<u>Type II seat belts</u> <u>and frontal airbag</u>
No. Data Channels:	<u>42</u>	<u>42</u>

Number of Cameras: 1 Real Time
16 High Speed

Door Opening Data: (without use of tools)	LF <u>Yes</u>	RF <u>Yes</u>	LR <u>Yes</u>	RR <u>Yes</u>
--	---------------	---------------	---------------	---------------

FRONT SEAT(S) DATA	DRIVER	PASSENGER
Seat Shift:	<u>4 mm</u> forward;	<u>4 mm</u> forward
Seat Back Movement:	<u>0</u>	<u>0</u>

VISIBLE DUMMY

CONTACT POINTS:	DRIVER	PASSENGER
Head	<u>Air bag</u>	<u>Air bag</u>
Chest	<u>Air bag</u>	<u>Air bag</u>
Left Knee	<u>Knee bolster</u>	<u>Knee bolster</u>
Right Knee	<u>Knee bolster</u>	<u>Knee bolster</u>

DATA SHEET NO. 2
GENERAL TEST AND VEHICLE PARAMETER DATA (Cont'd)

Vehicle Yr/Make/Model/Body Style: 2001 Lincoln Town Car 4-Door Sedan

VIN.: 1LNHM82W11Y633287

Body color: Green

Date of Manufacture: 10/00

Engine: 8 Cylinders; C.I.D.; 4.6 Liters;
X Gas; Diesel; Turbocharged
X Longitudinal; Transverse

Transmission: 3 Speed; Manual; X Automatic; X Overdrive

Final Drive: Front Wheel; X Rear Wheel; Four Wheel

Odometer Reading: 89 miles

Major Option:

X A/C; X P/S; X P/B; X P/wdo;
X P/locks; X Tilt Wheel; X Cruise Control; X ABS
Other: Side seat air bags

DATA RECORDED FROM VEHICLE'S TIRE PLACARD:

Tire Pressure (at capacity): Front 221 kPa (32 psi) Rear 221 kPa (32 psi)

Recommended Tire Size: P225/60R16

Recommended Cold Tire Pressure: Front 221 kPa (32 psi) Rear 221 kPa (32 psi)

Tires on Vehicle: P225/60R16 Manufacturer: Michellin

Number of Occupants: 3 Front; 3 Rear; 3rd Seat; 6 TOTAL

Type of Front Seats: X Bucket; Bench; Split Bench

Type of Front Seat Back: Fixed; X Adj. With; X Power; Lever

Vehicle Capacity Weight (VCW) = 499.0 kg (A)

No. of Occupants x 68.0 kg. = 408.0 kg (B)

Rated Cargo Weight (RCW) A-B = 91.0 kg

GVWR 2449 kg GAWR: Front 1214 kg Rear 1260 kg

GENERAL TEST AND VEHICLE PARAMETER DATA (Cont'd)

WEIGHT OF TEST VEHICLE AS RECEIVED FROM DEALER (WITH MAXIMUM FLUIDS) = UDW:

Right Front =	<u>525.7</u>	kg	Right Rear =	<u>411.0</u>	kg
Left Front =	<u>520.3</u>	kg	Left Rear =	<u>411.9</u>	kg
TOTAL FRONT =	<u>1046.0</u>	kg	TOTAL REAR =	<u>822.9</u>	kg
% of Total Weight =	<u>56.0</u>	%	% of Total Weight =	<u>44.0</u>	%
TOTAL UNLOADED DELIVERED WEIGHT (UDW) =				<u>1868.9</u>	kg

CALCULATION FOR TARGET TEST WEIGHT:

UDW = Unloaded Delivered Weight 1868.9 kg

VCW = Vehicle Capacity Weight 499.0 kg

DSC = Designated Seating Capacity 6

RCW = VCW - 68 (DSC) = 91.0 kg*

Target Test Weight = UDW + RCW + (2 dummies x 78.0 kg/dummy)

Target Test Weight = 2115.9 kg

WEIGHT OF TEST VEHICLE WITH REQUIRED DUMMIES AND CARGO:

Right Front =	<u>557.5</u>	kg	Right Rear =	<u>502.1</u>	kg
Left Front =	<u>557.5</u>	kg	Left Rear =	<u>494.0</u>	kg
TOTAL FRONT =	<u>1115.0</u>	kg	TOTAL REAR =	<u>996.1</u>	kg
% of Total Weight =	<u>52.8</u>	%	% of Total Weight =	<u>47.2</u>	%
TOTAL WEIGHT =				<u>2111.1</u>	kg
Weight of ballast secured in vehicle trunk area = <u>31.8</u> kg					
Vehicle components removed to meet target weight: <u>Spare tire, jack, lug wrench,</u>					
<u>rear seat, rear speakers, rear seat belts, driver side mirror.</u>					

VEHICLE ATTITUDE (all dimensions in mm):

Delivered Attitude:	RF <u>734</u>	LF <u>733</u>	RR <u>712</u>	LR <u>712</u>
Test Attitude:	RF <u>715</u>	LF <u>722</u>	RR <u>702</u>	LR <u>704</u>
Post Test	RF <u>798</u>	LF <u>758</u>	RR <u>716</u>	LR <u>687</u>
Wheel Base: <u>2985</u> mm; C.G. = <u>1408</u> mm rearward of front wheel C/L				
Remarks: _____				

* light trucks and MPVs RCW is 136 kgs or manufacturer's value, whichever is less

GENERAL TEST AND VEHICLE PARAMETER DATA (Cont'd)

FUEL SYSTEM DATA:

Fuel System Capacity From Owner's Manual = 71.9 liters

Usable Capacity Figure Furnished by COTR = 71.9 liters

Test Volume Range (92 to 94% of Usable Capacity) = 66.2 to 67.6 liters

ACTUAL TEST VOLUME = 66.6 liters

Test Fluid Type: Stoddard Solvent; Spec. Grav. = 0.77

Kinematic Viscosity = 1.788 centistrokes; Color = Purple

Type of Fuel Pump; Electric X; Mechanical ____

Does Electric Pump operate with ignition switch "ON" & engine "Off"?

Yes X No ____

DATA SHEET NO. 3
POST-IMPACT DATA

Vehicle Yr/Make/Model/Body Style: 2001 Lincoln Town Car 4-Door Sedan
VIN.: 1LNHM82W11Y633287

Type of Test: 35 mph Frontal Impact Impact Angle: 0E
Date of Test: November 9, 2000 Time of Test: 5:30 p.m.

Ambient Temperature: 21.1° C (70°F) (Spec. Range = 18.8 to 25.6°C)

Temperature in Occupant Compartment: 21.1° C (70°F)

Windshield Molding Temperature: 21.1° C (70°F)

Required Impact Velocity Range: 55.5 to 57.1 kph

Impact Velocity: primary = 56.5 kph; secondary = 56.3 kph

Distance From Front Bumper to Barrier Face When

Entering Speed Trap: 1300 mm

Exiting Speed Trap: 300 mm

VEHICLE REBOUND AND CRUSH (mm):

Vehicle Length:	Pre-test	= Right	<u>5215</u>	C/L	<u>5389</u>	Left	<u>5225</u>
	Post-test	= Right	<u>4658</u>	C/L	<u>4710</u>	Left	<u>4778</u>
	Crush	= Right	<u>557</u>	C/L	<u>679</u>	Left	<u>447</u>

Distance from front of test vehicle to point of impact (rebound):

Right 1025 mm C/L 1050 mm Left 1083 mm

Average = 1052 mm

DATA SHEET NO. 4
TEST VEHICLE INFORMATION

	<u>Front</u>		<u>Rear</u>	
<u>Post-Test Door Opening</u>	<u>Left</u>	<u>Right</u>	<u>Left</u>	<u>Right</u>
(without use of tools)	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>

	<u>Front</u>		<u>Rear</u>	
<u>Seat Movement</u>	<u>Left</u>	<u>Right</u>	<u>Left</u>	<u>Right</u>
Seat Back Movement	<u>none</u>	<u>none</u>	<u>N/A</u>	<u>N/A</u>
Seat Shift (mm)	<u>4 mm forward</u>	<u>4 mm forward</u>	<u>N/A</u>	<u>N/A</u>

Glazing Damage

Backlight/Windshield Windshield cracked

Other Notable Impact Effects: _____

DATA SHEET 5
FMVSS NO. 212, "WINDSHIELD MOUNTING", DATA SHEET

Details of windshield mounting such as retention method, trim type, etc.:

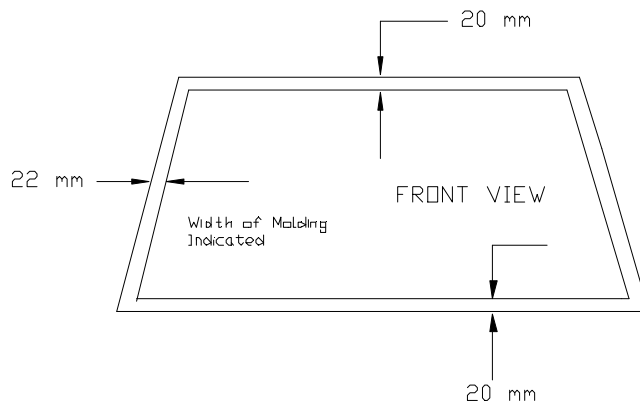
Windshield set in rubber molding with glue

FMVSS 212 Requirements: The Post-Test periphery retention amount must be at least 75% of the Pre-Test periphery measurement for vehicles NOT equipped with automatic restraints, and 50% for each side of windshield for vehicles equipped with automatic restraint systems for front occupants.

FMVSS 212 TEST DATA:

	WINDSHIELD PERIPHERY		PERCENT RETENTION
	PRE-TEST (mm)	POST-TEST (mm)	
RIGHT SIDE	2185	2185	100%
LEFT SIDE	2185	2185	100%
TOTAL	4370	4370	100%

AREA OF RETENTION FAILURE: None



FAILURE DETAILS: None

DATA SHEET 6

FMVSS NO. 219, "WINDSHIELD ZONE INTRUSION", DATA SHEET

PROTECTED ZONE LOWER EDGE REQUIREMENT:

The lower edge of the protected zone is determined by placing a 6.5" dia. rigid sphere weighing 15 pounds in a position such that it simultaneously contacts the inner surface of the windshield and the surface of the instrument panel, including padding, and drawing the locus of points on the inner surface of the windshield contactable by the sphere across the width of the instrument panel. From the outermost contact points, extend the locus line horizontally to the edges of the windshield, and then draw a line on the inner surface of the windshield below and $\frac{1}{2}$ " distant from the locus line. The LOWER EDGE OF THE PROTECTED ZONE is the longitudinal projection onto the outer surface of the windshield of this line.

FMVSS 219 TEST DATA:

A= 1234 mm

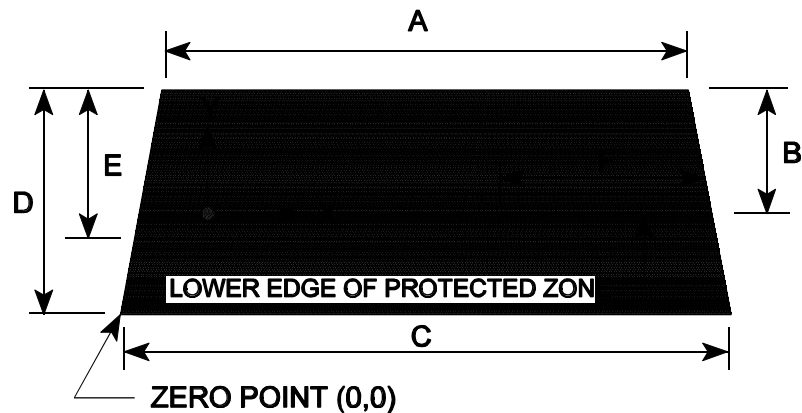
B= 405 mm

C= 1706 mm

D= 715 mm

E= 452 mm

F= 727 mm



DETAILS OF WINDSHIELD GLASS PENETRATION GREATER THAN 1/4":

(Show location of penetration)

FMVSS NO. 301-75, FUEL SYSTEM INTEGRITY POST IMPACT TEST DATA

Test Date: November 9, 2000

Usable Capacity of Vehicle's Fuel Tank: 71.9 Liters
(figure furnished by vehicle manufacturer)

Drain the test vehicle's fuel system and operate the engine until the fuel system is dry. Add Stoddard solvent, which has been dyed purple, until 92-94% of the stated usable capacity is reached. Operate the engine to assure the Stoddard solvent is present throughout the entire fuel system.

TEST VEHICLE IMPACT TYPE: X Frontal (35 mph)

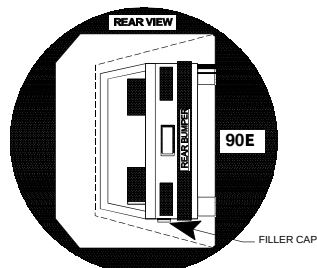
Side Impact MDB (33.2 mph)

1. From impact until vehicle motion ceases
2. For 5 minute period after vehicle motion ceases
3. For next 25 minutes

SOLVENT SPILLAGE DETAILS: None

DATA SHEET 8
FMVSS NO. 301 STATIC ROLLOVER DATA SHEET

TEST PHASE: 0° - 90°



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90^B Rotation Time 2 minutes 42 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time + 5 minutes 0 seconds

TOTAL 7 minutes 42 seconds

Next whole minute interval 8 minutes

II. FMVSS 301 REQUIREMENTS:

(1) Time Period

First 5 min FROM onset of rotation	6th min.	7th min.	8th min. if reqd.
------------------------------------	----------	----------	-------------------

(2) Maximum Allowable Solvent Spillage

5 ounces	1 ounce	1 ounce	1 ounce
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III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

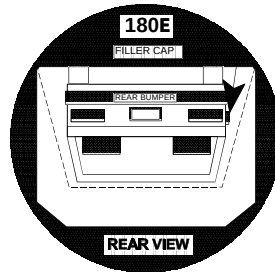
0	0	0	0
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Note: Record spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATIONS(S): None

DATA SHEET 8
FMVSS NO. 301 STATIC ROLLOVER DATA SHEET (Cont'd)

TEST PHASE: 90°- 180°



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90^B Rotation Time 2 minutes 30 seconds
(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time + 5 minutes 0 seconds
TOTAL 7 minutes 30 seconds
Next whole minute interval 8 minutes

II. FMVSS 301 REQUIREMENTS:

(1) Time Period

First 5 min FROM onset of rotation	6th min.	7th min.	8th min. if reqd.
------------------------------------	----------	----------	-------------------

(2) Maximum Allowable Solvent Spillage

5 ounces	1 ounce	1 ounce	1 ounce
----------	---------	---------	---------

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

0	0	0	0
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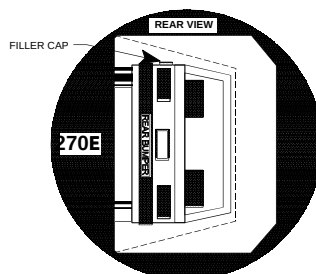
Note: Record spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATIONS(S): None

DATA SHEET 8

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET (Cont'd)

TEST PHASE: 180° - 270°



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90^B Rotation Time 2 minutes 27 seconds
(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time + 5 minutes 0 seconds
TOTAL 7 minutes 27 seconds

Next whole minute interval 8 minutes

II. FMVSS 301 REQUIREMENTS:

(1) Time Period

First 5 min FROM onset of rotation	6th min.	7th min.	8th min. if reqd.
------------------------------------	----------	----------	-------------------

(2) Maximum Allowable Solvent Spillage

5 ounces	1 ounce	1 ounce	1 ounce
----------	---------	---------	---------

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

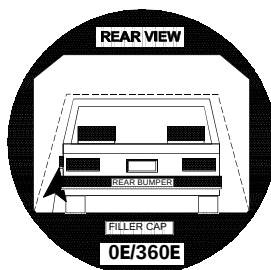
0	0	0	0
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Note: Record spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATIONS(S): None

DATA SHEET 8
FMVSS NO. 301 STATIC ROLLOVER DATA SHEET (Cont'd)

TEST PHASE: 270E - 360E



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90^B Rotation Time 2 minutes 40 seconds
(Spec. Range = 1 to 3 minutes)
FMVSS 301 Position Hold Time + 5 minutes 0 seconds
TOTAL 7 minutes 40 seconds
Next whole minute interval 8 minutes

II. FMVSS 301 REQUIREMENTS:

(1) Time Period

First 5 min FROM onset of rotation	6th min.	7th min.	8th min. if reqd.
------------------------------------	----------	----------	-------------------

(2) Maximum Allowable Solvent Spillage

5 ounces	1 ounce	1 ounce	1 ounce
----------	---------	---------	---------

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

0	0	0	0
---	---	---	---

Note: Record spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATIONS(S): None

DATA SHEET 9

DUMMY INJURY CRITERIA VALUES DATA SHEET

Vehicle Year/Make/Model/Body Style: 2001 Lincoln Town Car 4-Door Sedan

Test Date: November 9, 2000

DESCRIPTION	UNIT	MAXIMUM VALUE			
		pos.	msec.	neg.	msec.
Pos. 1 Head X	G	0.8	45	45.2	95
Pos. 1 Head Y	G	8.5	108	3.1	66
Pos. 1 Head Z	G	23.4	81	11.7	127
Pos. 1 Head Resultant	G	49.1	96	--	--
Pos. 2 Head X	G	3.3	142	49.3	93
Pos. 2 Head Y	G	6.5	62	7.4	101
Pos. 2 Head Z	G	21.7	74	17.2	129
Pos. 2 Head Resultant	G	52.8	93	--	--
Pos. 1 Chest X	G	2.8	169	35.8	106
Pos. 1 Chest Y	G	2.3	120	3.0	69
Pos. 1 Chest Z	G	10.1	96	17.4	126
Pos. 1 Chest Resultant	G	36.0	106	--	--
Pos. 1 Chest Displacement	mm	--	--	31	93
Pos. 2 Chest X	G	3.2	200	35.2	90
Pos. 2 Chest Y	G	4.6	97	1.5	124
Pos. 2 Chest Z	G	9.8	94	16.2	128
Pos. 2 Chest Resultant	G	36.2	90	--	--
Pos. 2 Chest Displacement	mm	--	--	28	93
Pos. 1 Left Femur	N	254.8	124	4319.2	63
Pos. 1 Right Femur	N	460.1	121	2824.9	92
Pos. 2 Left Femur	N	492.7	114	2107.0	52
Pos. 2 Right Femur	N	611.3	115	1966.7	54

DATA SHEET 9

DUMMY INJURY CRITERIA VALUES DATA SHEET (Cont'd)

DESCRIPTION	UNIT	MAXIMUM VALUE			
		pos.	msec.	neg.	msec.
Pos. 1 Lap Belt Load	N	3301.9	62	--	--
Pos. 1 Torso Belt Load	N	4995.9	72	--	--
Pos. 2 Lap Belt Load	N	4483.2	67	--	--
Pos. 2 Torso Belt Load	N	4914.0	69	--	--
Pos. 1 Upper Neck Fx	N	368.5	104	468.0	154
Pos. 1 Upper Neck Fy	N	250.9	142	121.8	78
Pos. 1 Upper Neck Fz	N	1793.9	82	529.2	127
Pos. 1 Neck Force Resultant	N	1798.7	82	--	--
Pos. 1 Upper Neck Mx	N•m	7.2	121	8.7	100
Pos. 1 Upper Neck My	N•m	41.4	167	17.3	61
Pos. 1 Upper Neck Mz	N•m	4.8	185	9.9	101
Pos. 1 Neck Moment Result	N•m	41.7	167	--	--
Pos. 2 Upper Neck Fx	N	630.9	84	194.2	59
Pos. 2 Upper Neck Fy	N	169.6	83	241.7	118
Pos. 2 Upper Neck Fz	N	1609.6	70	551.4	132
Pos. 2 Neck Force Result	N	1611.8	70	--	--
Pos. 2 Upper Neck Mx	N•m	6.6	195	6.7	136
Pos. 2 Upper Neck My	N•m	50.1	85	14.9	149
Pos. 2 Upper Neck Mz	N•m	8.6	101	3.1	161
Pos. 2 Neck Moment Result	N•m	50.4	85	--	--
Pos. 1 Pelvic (X)	G	7.9	143	54.9	50
Pos. 1 Pelvic (Y)	G	6.3	51	7.0	51
Pos. 1 Pelvic (Z)	G	21.4	124	3.7	51
Pos. 1 Pelvic Resultant	G	55.1	50	--	--

DATA SHEET 9

DUMMY INJURY CRITERIA VALUES DATA SHEET (Cont'd)

DESCRIPTION	UNIT	MAXIMUM VALUE			
		pos.	msec.	neg.	msec.
Pos. 2 Pelvic (X)	G	8.1	130	35.8	68
Pos. 2 Pelvic (Y)	G	6.1	92	6.3	104
Pos. 2 Pelvic (Z)	G	21.7	106	2.1	41
Pos. 2 Pelvic Resultant	G	36.9	91	--	--
Pos. 1 Left Upper Tibia Mx	N•m	10.6	183	60.5	61
Pos. 1 Left Upper Tibia My	N•m	88.2	62	72.3	95
Pos. 1 Left Upper Tibia Fz	N	3941.0	56	313.7	155
Pos. 1 Left Lower Tibia Mx	N•m	2.3	200	28.7	85
Pos. 1 Left Lower Tibia My	N•m	58.0	64	5.8	47
Pos. 1 Left Lower Tibia Fz	N	4377.9	56	950.5	141
Pos. 1 Right Upper Tibia Mx	N•m	39.7	109	88.6	69
Pos. 1 Right Upper Tibia My	N•m	26.6	165	149.5	60
Pos. 1 Right Upper Tibia Fz	N	2829.9	103	431.9	196
Pos. 1 Right Lower Tibia Mx	N•m	29.0	58	140.5	68
Pos. 1 Right Lower Tibia My	N•m	120.5	68	58.8	58
Pos. 1 Right Lower Tibia Fz	N	3198.5	103	505.1	192
Pos. 2 Left Upper Tibia Mx	N•m	14.9	200	27.6	99
Pos. 2 Left Upper Tibia My	N•m	22.6	169	99.4	103
Pos. 2 Left Lower Tibia Fz	N	2516.1	103	180.5	153
Pos. 2 Left Lower Tibia Mx*	N•m	NVD	NVD	NVD	NVD
Pos. 2 Left Lower Tibia My	N•m	54.0	99	33.9	72
Pos. 2 Left Lower Tibia Fz	N	2974.8	103	161.7	152
Pos. 2 Right Upper Tibia Mx	N•m	54.0	54	25.6	89
Pos. 2 Right Upper Tibia My	N•m	24.1	149	111.6	70
Pos. 2 Right Upper Tibia Fz	N	3040.9	96	315.6	148
Pos. 2 Right Lower Tibia Mx	N•m	9.8	43	82.3	90
Pos. 2 Right Lower Tibia My	N•m	60.2	97	15.2	70
Pos. 2 Right Lower Tibia Fz	N	3199.2	96	95.1	156

DATA SHEET 10 DUMMY POSITIONING IN VEHICLE

Vehicle: 2001 Lincoln Town Car 4-Door Sedan

SEAT TYPE:

☐ Bench
☒ Bucket
☐ Split Bench

ADJUSTER TYPE:

Driver: ☐ Manual
☒ Power

Passenger: ☐ Manual
☒ Power

BUCKET SEAT BACK TYPE:

☐ Fixed
☒ Adjustable Reclining

☐ Fixed
☒ Adjustable Reclining

DRIVER SEAT POSITION

125 mm rearward of forward-most position. 250 mm total travel

Seat back angle 29.3° (ref. sill)

PASSENGER SEAT POSITION

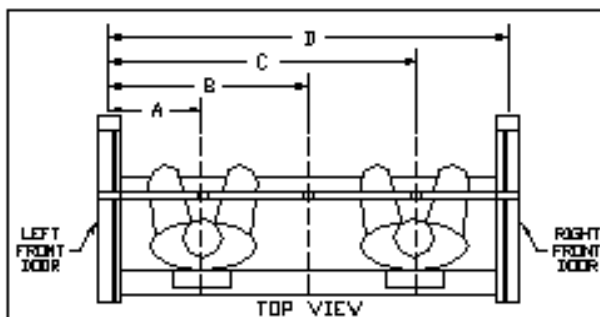
127 mm rearward of forward-most position. 250 mm total travel

Seat back angle 29.3° (ref. sill)

Steering column set to mid position.

Steering column angle 23.0°

3rd notch of 5



066 DUMMY ID 065

A = Left Door to Driver Centerline 438 mm

B = Left Door to Center Passenger Centerline 835 mm

C = Left Door to Right Passenger Centerline 1235 mm

D = Left Door to Right Door 1670 mm

DATA SHEET 10
DUMMY POSITIONING IN VEHICLE (Cont'd)

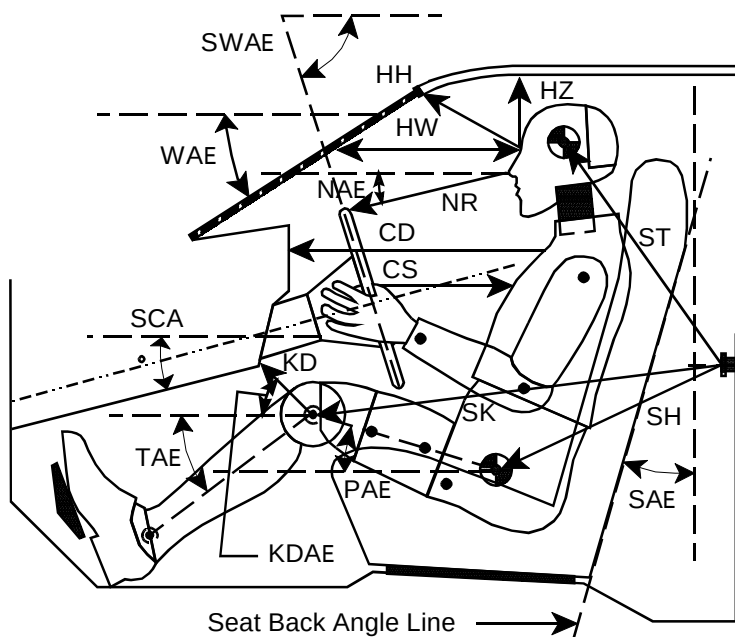
Units (mm)

	DRIVER (Serial #066)	PASSENGER (Serial #065)
WA°	29.1°	
SWA°	66.8°	N/A
SCA°	23.0°	N/A
SA°	29.3°	29.5°
HZ	187	178
HH	343	231
HW	568	551
HR	246	206
NR	373 Angle 17.6°	N/A
CD	532	538
CS	286	N/A
RA	175	N/A
KDL	151 Angle 17.9°	117
KDR	148	151 Angle 0.0°
PAE	23.7°	24.4°
TAE	38.1°	40.5°
KK	312	255
ST*	550 Angle 5.9°	550 Angle 8.4°
SK*	573 Angle 90.7°	578 Angle 88.1°
SH*	199 Angle 29.9°	213 Angle 27.4°
SHY	285	268
HS	350	350
HD	156	132
AD	124	129

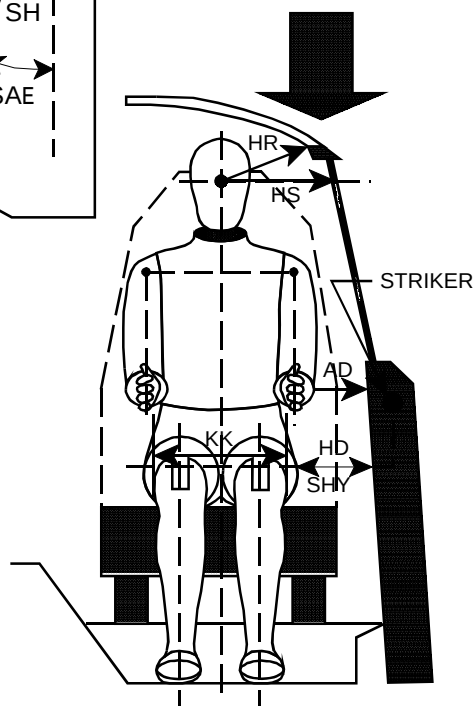
N/A = Not Applicable

* angle measured with respect to vertical

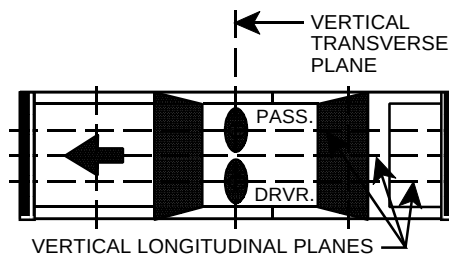
FRONT SEAT MEASUREMENTS



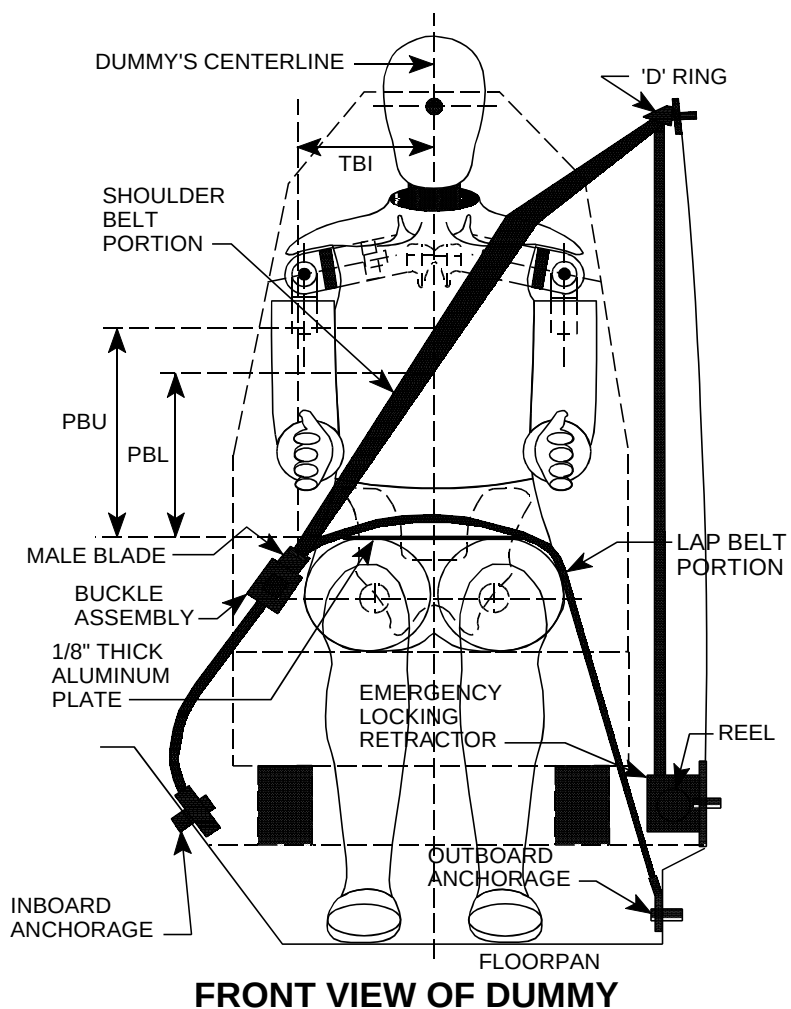
AD - Arm to Door
 HD - H-Point to Door
 HR - Head to Side Header
 HS - Head to Side Window
 KK - Knee to Knee
 SHY - Striker to H-Point (Y Direction)



CD - Chest to Dash
 CS - Steering Wheel to Chest
 HH - Head to Header
 HW - Head to Windshield
 HZ - Head to Roof
 KDA - Knee to Dash Angle
 KDL - Left Knee to Dash
 KDR - Right Knee to Dash
 NA - Nose to Rim Angle
 NR - Nose to Rim
 PA - Pelvic Angle
 RA - Rim to Abdomen
 SA - Seat Back Angle
 SCA - Steering Column Angle
 SH - Striker to H-Point
 SK - Striker to Knee
 ST - Striker to Head
 SWA - Steering Wheel Angle
 TA - Tibial Angle
 WA - Windshield Angle



DATA SHEET 11 SEAT BELT POSITIONING DATA



FRONT VIEW OF DUMMY

(illustration)

Dimension = mm		
	DRIVER DUMMY	PASSENGER DUMMY
<u>PBU</u> -- Top surface of alum. plate to upper edge	344	383
<u>PBL</u> -- Top surface of alum. plate to belt lower edge	261	285

DATA SHEET 12
SEAT BELT PERFORMANCE ASSESSMENT TEST DATA

<u>BELT LENGTH DATA:</u>	<u>Driver</u>	<u>Passenger</u>
Length from trim above retractor reel to "D" ring as measured on dummy.	<u>191 mm</u>	<u>235 mm</u>
Shoulder belt length as measured on Part 572 Dummy.	<u>815 mm</u>	<u>864 mm</u>
Lap belt length as measured on Part 572 Dummy.	<u>887 mm</u>	<u>907 mm</u>
<u>SHOULDER BELT SPOOL-OFF DATA:</u>		
As determined by film analysis	<u>95 mm</u>	<u>127 mm</u>
As determined mechanically at Retractor	<u>Not recorded at customers request</u>	
As determined mechanically at D-Ring	<u>Not recorded at customers request</u>	
<u>BELT STRETCH DATA:</u>		
Measured electronically between shoulder belt load cell and the "D" ring.	<u>Not Recorded</u>	<u>Not Recorded</u>
Measured mechanically	<u>Not Recorded</u>	<u>Not Recorded</u>
<u>RETRACTOR LOCK-UP TIME:</u>		
As determined by shoulder belt spool-off observed in on-board cameras	<u>20 msec.</u>	<u>21 msec.</u>

DATA SHEET 13
CAMERA LOCATIONS

Test Date: November 9, 2000

VehicleYear/Make/Model/Body Style: 2001 Lincoln Town Car 4-Door Sedan

CAMERA POSITION NO.	VIEW	CAMERA POSITIONS (mm.)*			LENS (mm)	SPEED (fps)
		X	Y	Z		
1	Real-Time Left Side View	--	--	--	18	32
2	Left Front View	1000	-8510	1460	25	1015
3	Steering Column Top	2250	-8190	1560	25	1000
4	Steering Column Bottom	2250	-8190	1040	25	1000
5	Driver Close-up	1820	-10000	1390	25	957
6	Driver Angle	4680	-5240	2020	50	1005
7	Onboard Driver	--	--	--	25	1000
8	Onboard Passenger	--	--	--	35	1010
9	Right Overall	2330	7950	1310	13	1015
10	Right Passenger Half	1140	8100	1340	25	1020
11	Right Close-up	1580	10240	1240	75	1064
12	Right Angle	4880	5600	2020	50	1053
13	Windshield	-450	0	2710	13	1015
14	Top Driver	70	-440	1780	13	**
15	Top Passenger	80	400	1770	13	1010
16	Pit Front	1100	0	-3200	13	966
17	Pit Rear	2480	0	-3200	13	1015

* COORDINATES:

+X = film plane rearward of barrier

+Y = film plane to right of monorail centerline

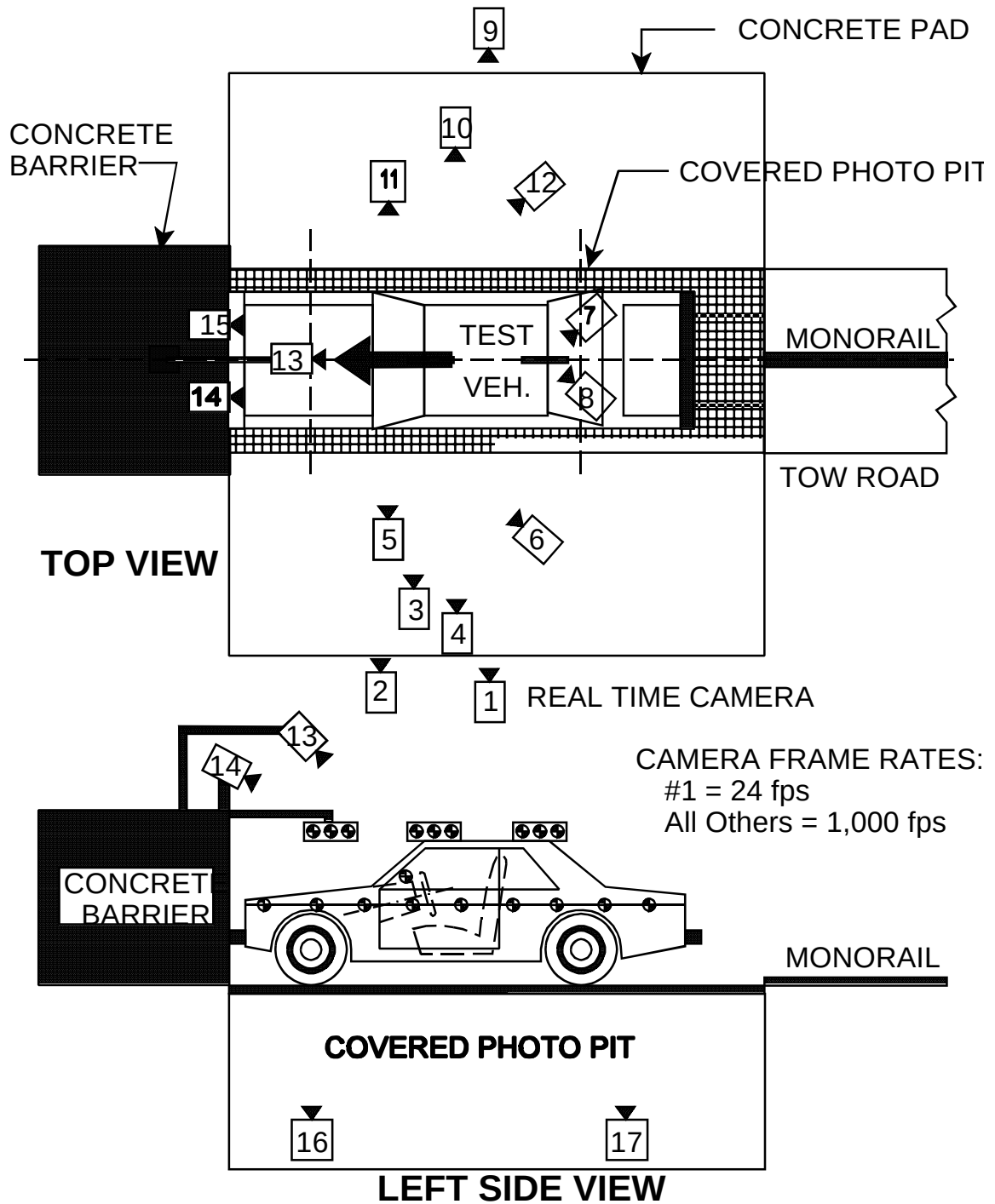
+Z = film plane to above ground level

ORIGIN: For X and Y it is the Impact Point. For Z it is the Floor.

** No timing marks

CAMERA LOCATIONS (Cont'd)

CAMERA POSITIONS FOR FRONTAL IMPACTS

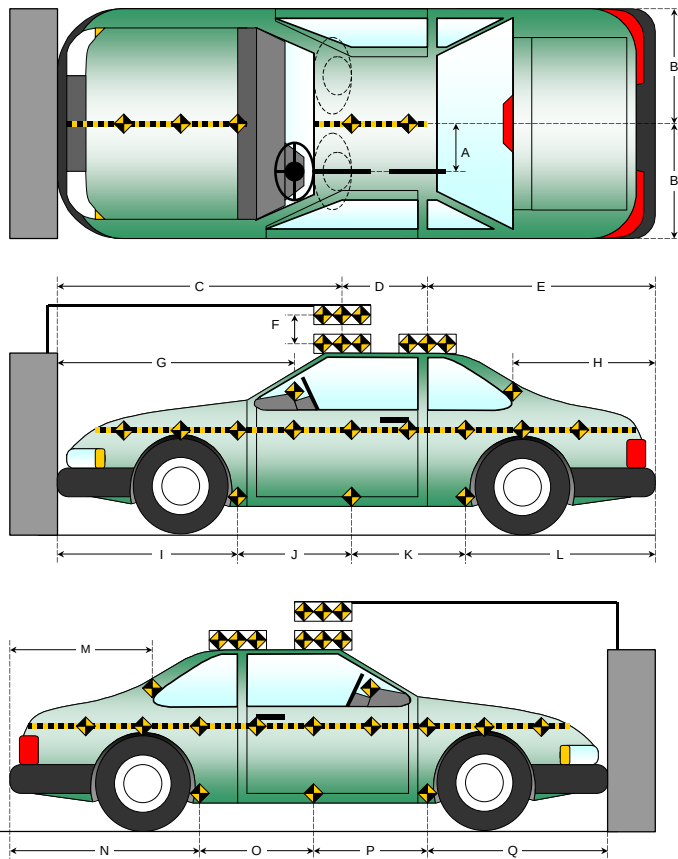


DATA SHEET 14 VEHICLE TARGET LOCATIONS

Test Date: November 9, 2000

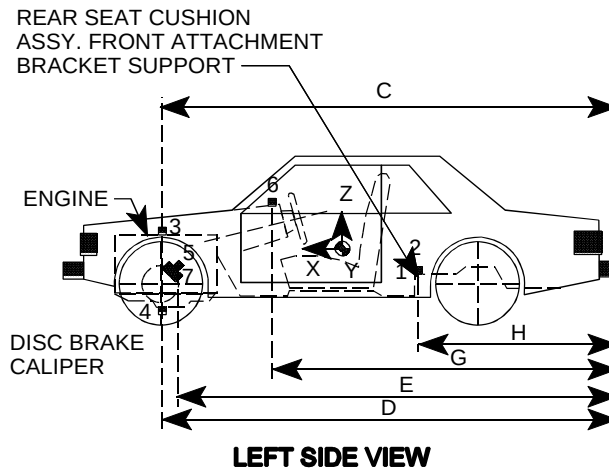
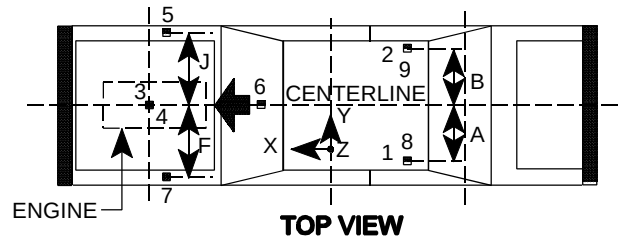
VehicleYear/Make/Model/Body Style: 2001 Lincoln Town Car 4-Door Sedan

All Dimensions
in mm



Item	Value
A	408
B	993
C	2785
D	609
E	1995
F	330
G	1918
H	1373
I	1510
J	1011
K	1012
L	1856
M	1380
N	1868
O	1014
P	1010
Q	1497

DATA SHEET 15
VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY



Units: (mm)

Dimension	Length	ACCEL. NO.	ACCELEROMETER	DIRECTION
A	560	1 and 8	Left Rear Seat Crossmember	X
B	560	2 and 9	Right Rear Seat Crossmember	X
C	4224	3	Top of Engine	X
D	4066	4	Bottom of Engine	X
E	4155	5	Right Side Brake Caliper	X
F	643	6	Instrument Panel	X
G	3477	7	Left Side Brake Caliper	X
H	2162			
J	643			

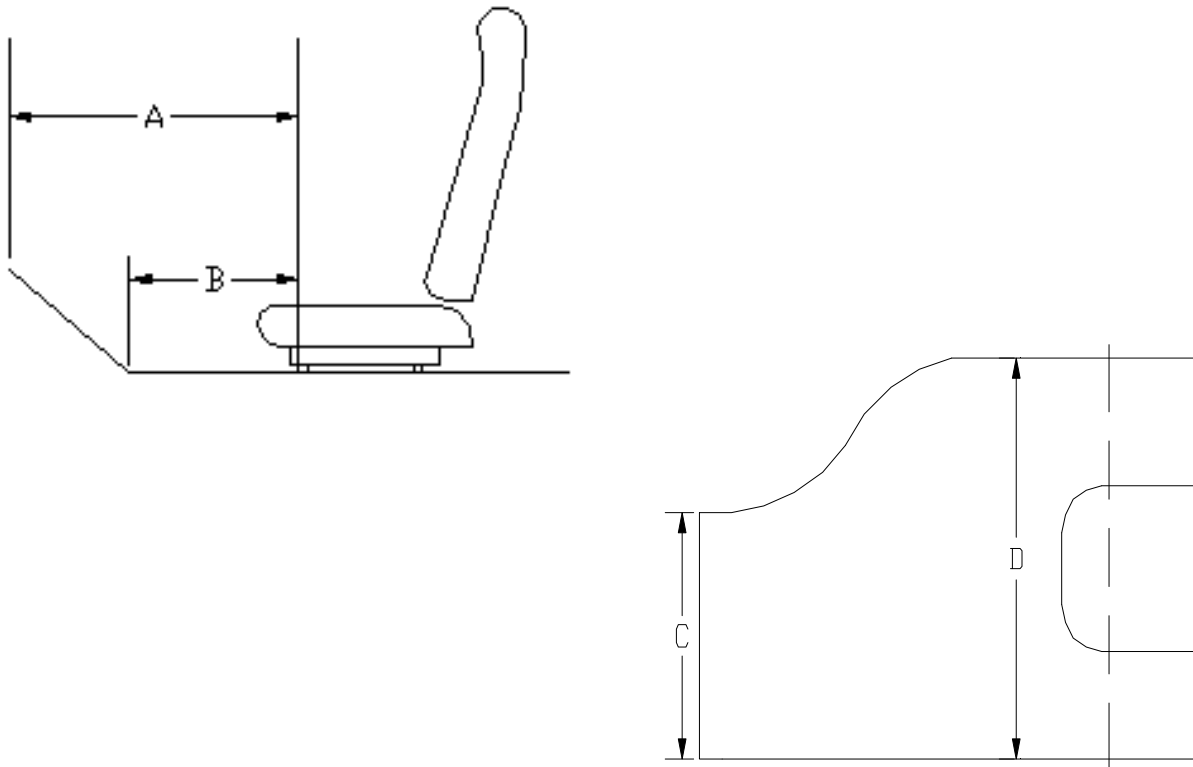
DATA SHEET 16
POST TEST AIRBAG DATA

- A. Number of Vent Holes: Driver 2; Passenger 1
- B. Size of Vent Holes: Driver 25 mm dia; Passenger 75 mm dia;
- C. Total Vent Area; Driver 9.8 cm² Passenger 17.7 cm²
- D. Deflated Airbag Length and Width Dimensions or, if Round, Diameter
Driver; Length____mm, Width____mm, Diameter 558 mm
Passenger; Length 558 mm, Width 533 mm, Diameter ____ mm
- E. Is the Airbag Tethered?
Driver; X Yes; ____ No; If yes, record length of tether 279 mm
Passenger; ____ Yes; X No, If yes, record length of tether _____mm

DATA SHEET 17
TEST VEHICLE MEASUREMENTS

STATIC FOOTWELL DEFORMATION

Driver's Side



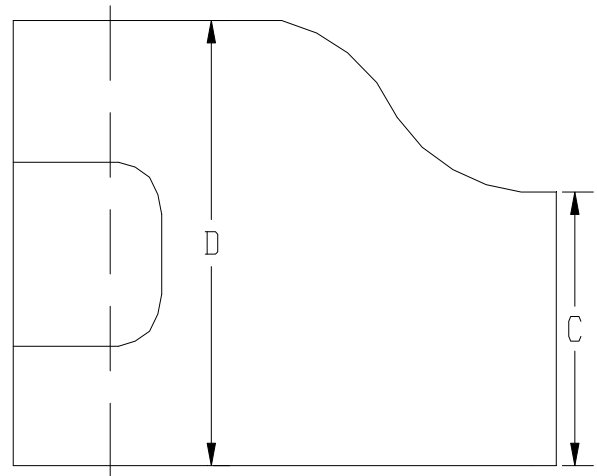
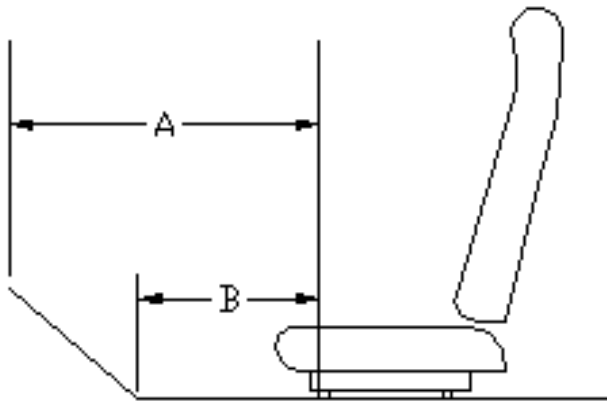
Units = mm

MEASUREMENT	PRE TEST	POST TEST	DIFFERENCE
A	1726	1596	130
B	1532	1437	95
C	390	383	7
D	495	495	0

DATA SHEET 17
TEST VEHICLE MEASUREMENTS (Cont'd)

STATIC FOOTWELL DEFORMATION

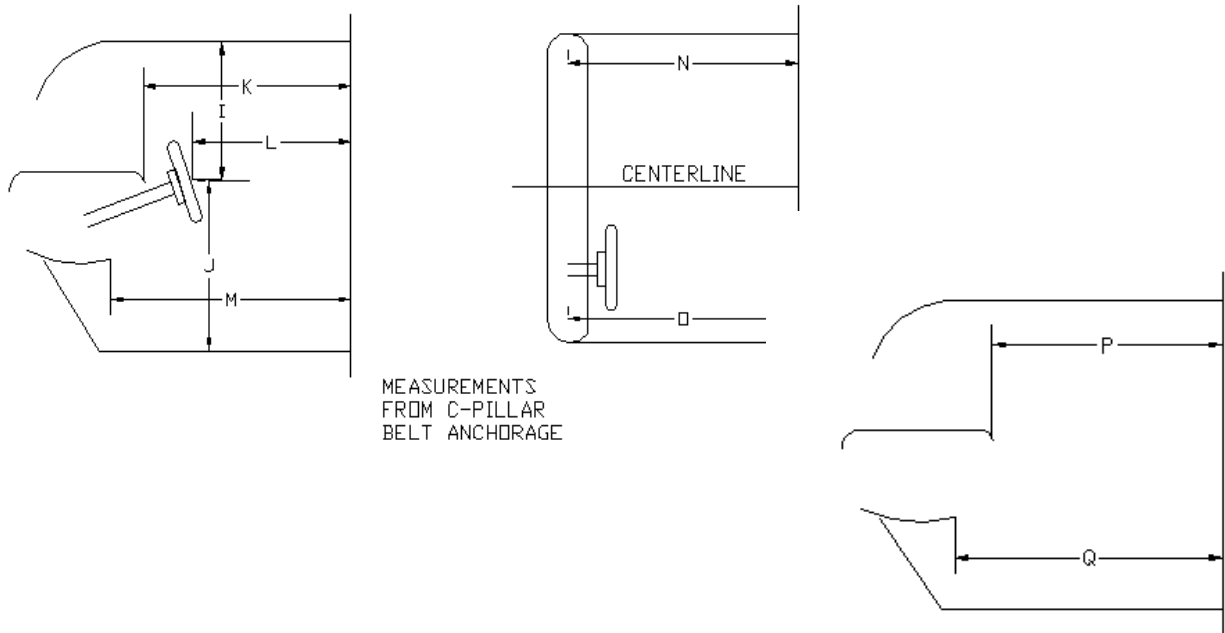
Passenger's Side



Units = mm

MEASUREMENT	PRE TEST	POST TEST	DIFFERENCE
A	1652	1575	77
B	1538	1467	71
C	380	377	3
D	501	501	0

DATA SHEET 17
TEST VEHICLE MEASUREMENTS (Cont'd)
STATIC PASSENGER COMPARTMENT INTRUSION



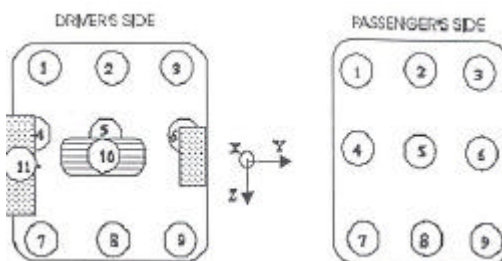
Units = mm

MEASUREMENT	PRE TEST	POST TEST	DIFFERENCE
I	448	424	24
J	583	648	-65
K	1202	1198	4
L	951	955	-4
M	1159	1161	-2
N	1440	1438	2
O	1445	1452	-7
P	1138	1130	8
Q	1341	1352	-11

DATA SHEET 17

TEST VEHICLE MEASUREMENTS (Cont'd)

TOE PAN MEASUREMENTS

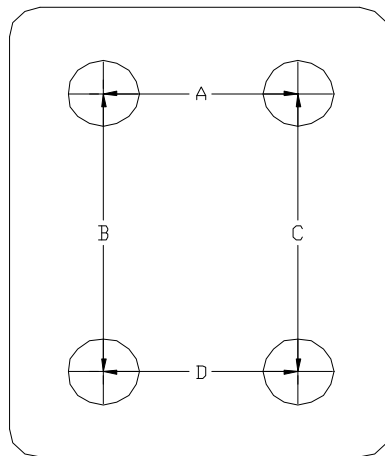


Driver						
Location	X			Z		
	Pre-Test	Post-Test	Def.	Pre-Test	Post-Test	Def.
1	730	657	73	169	215	-46
2	793	627	166	140	196	-56
3	751	593	158	100	192	-92
4	656	564	92	47	97	-50
5	665	520	145	30	102	-72
6	663	533	130	15	98	-83
7	557	499	58	-68	-38	-30
8	564	468	96	-70	-27	-43
9	555	473	82	-75	-11	-64
10	520	524	-4	152	179	-27
11	635	572	63	35	81	-46
Passenger						
Location	X			Z		
	Pre-Test	Post-Test	Def.	Pre-Test	Post-Test	Def.
1	671	596	75	103	185	-82
2	674	597	77	103	190	-87
3	672	642	30	68	133	-65
4	610	535	75	25	80	-55
5	640	563	77	17	125	-108
6	637	600	37	24	93	-69
7	544	482	62	-71	-20	-51
8	560	489	71	-89	-13	-76
9	560	526	34	-67	-12	-55

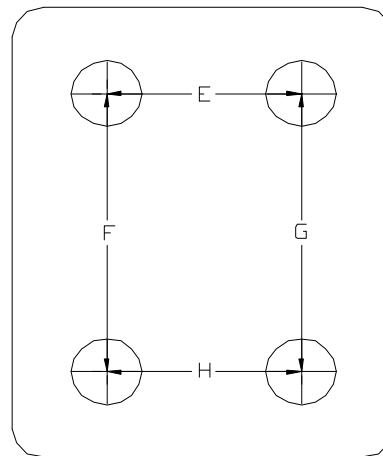
DATA SHEET 17
TEST VEHICLE MEASUREMENTS (Cont'd)

UNDERBODY FLOORBOARD DEFORMATION

DRIVER'S SIDE



PASSENGER'S SIDE

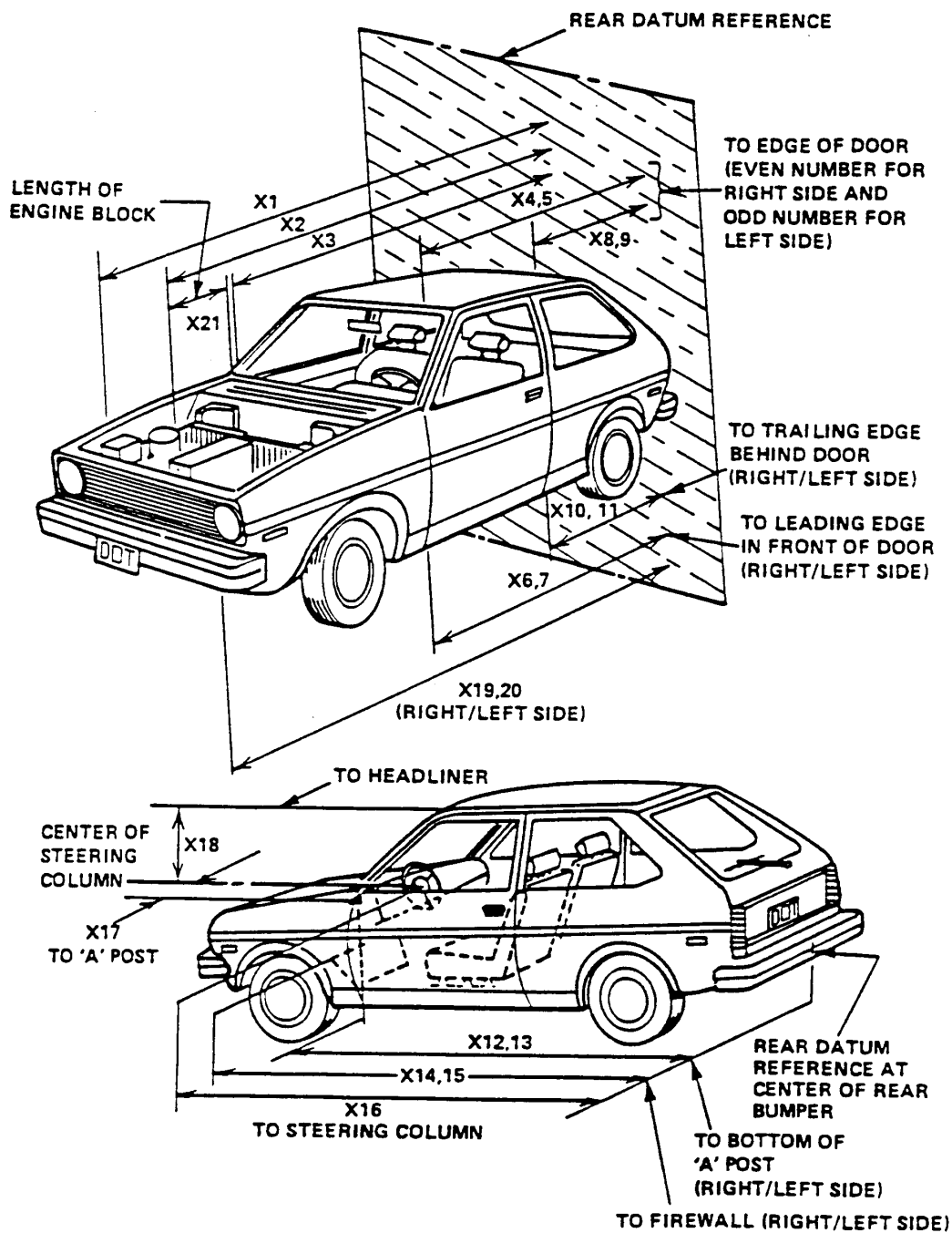


MEASUREMENT	PRE TEST	POST TEST	DIFFERENCE
A	371	372	-1
B	334	330	4
C	348	254	94
D	416	417	-1
E	347	333	14
F	371	328	43
G	351	336	15
H	378	379	-1

DATA SHEET 17
TEST VEHICLE MEASUREMENTS (Cont'd)

No.	MEASUREMENT DESCRIPTION:	Pre-Test (mm)	Post-Test (mm)	Diff. (mm)
X1	Total Length of Test Vehicle at Centerline	5389	4710	679
X2	Rear Surface of Vehicle to Front of Engine	4539	4274	265
X3	Rear Surface of Vehicle to Firewall	4069	4066	3
X4	Rear Surface to Upr. Leading Edge of Rt. Door	3616	3600	16
X5	Rear Surface to Upr. Leading Edge of Left Door	3612	3608	4
X6	Rear Surface to Lwr. Leading Edge of Rt. Door	3657	3653	4
X7	Rear Surface to Lwr. Leading Edge of Left Door	3664	3658	6
X8	Rear Surface to Upr. Trailing Edge of Rt. Door	2553	2542	11
X9	Rear Surface to Upr. Trailing Edge of Left Door	2554	2542	12
X10	Rear Surface to Lwr. Trailing Edge of Rt. Door	2571	2569	2
X11	Rear Surface to Lwr. Trailing Edge of Left Door	2575	2567	8
X12	Rear Surface to Bottom of A-Post on Rt. Side	3587	3561	26
X13	Rear Surface to Bottom of A-Post on Left Side	3582	3564	18
X14	Rear Surface to Firewall on Right Side	3909	3858	51
X15	Rear Surface to Firewall on Left Side	3936	3886	50
X16	Rear Surface to Steering Column	3105	3154	-49
X17	Center of Steering Column to A-Post	391	365	26
X18	Center of Steering Column to Headlining	448	424	24
X19	Rear Surface to Right Side of Front Bumper	5215	4658	557
X20	Rear Surface to Left Side of Front Bumper	5225	4778	447
X21	Length of Engine Block	530	530	0

DATA SHEET 17
TEST VEHICLE MEASUREMENTS (Cont'd)



DATA SHEET 18
ACCIDENT INVESTIGATION DIVISION DATA
FOR 35 MPH FRONTAL BARRIER IMPACT

Vehicle Make/Model/Body Style: 2001 Lincoln Town Car 4-Door Sedan

VIN: 1LNHM82W11Y633287

Model Year: 2001; Build Date: 10/00; Test Date: November 9, 2000

Veh. Size Category: Luxury; TEST WEIGHT: 2111.1 kg

Veh. Wheelbase: 2985 mm; Front Overhang: 1018 mm; Overall Width: 1986 mm

ACCELEROMETER DATA:

Location: As per measurements on pages 2-25

Calibration Procedure: As per MGA Calibration Procedure

Linearity: >99.9%; Integration Algorithm: Trapezoidal

Veh: Impact Speed: 56.5 kph; Time Of Separation: 145 msec

Velocity Change: 64.4 kph

Collision Deformation Classification (CDC) Code: F (Frontal)

Crush Depth C1 = 447 mm

Dimensions*: C2 = 599 mm

C3 = 642 mm

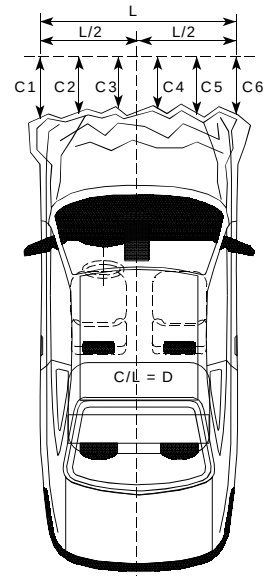
C4 = 700 mm

C5 = 699 mm

C6 = 557 mm

Midpoint Of Damage: D = Vehicle Centerline (Longitudinal)

Length Of Damaged Region: L = 1620 mm



APPENDIX A
PHOTOGRAPHS

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Photo No. A-1 - Pre-Test Front View of Test Vehicle

A-2



Photo No. A-2 - Post-Test Front View of Test Vehicle



Photo No. A-3 - Pre-Test Rear View of Test Vehicle



Photo No. A-4 - Post-Test Rear View of Test Vehicle

A-5



Photo No. A-5 - Pre-Test Left Side View of Test Vehicle

A-6



Photo No. A-6 - Post-Test Left Side View of Test Vehicle

A-7



Photo No. A-7 - Pre-Test Left Rear Three-Quarter View of Test Vehicle



Photo No. A-8 - Post-Test Left Rear Three-Quarter View of Test Vehicle

A-9



Photo No. A-9 - Pre-Test Right Side View of Test Vehicle

A-10

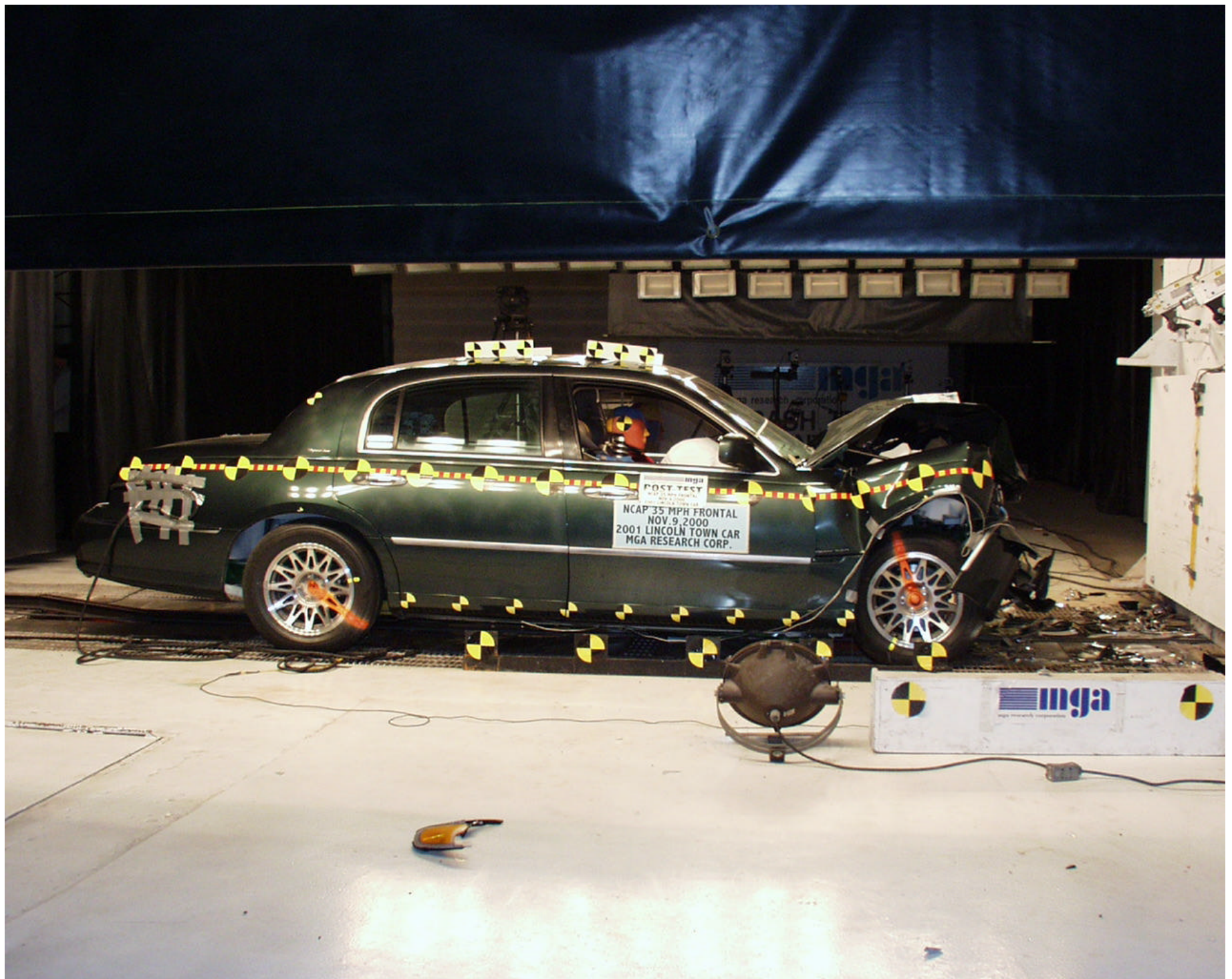


Photo No. A-10 - Post-Test Right Side View of Test Vehicle

A-11

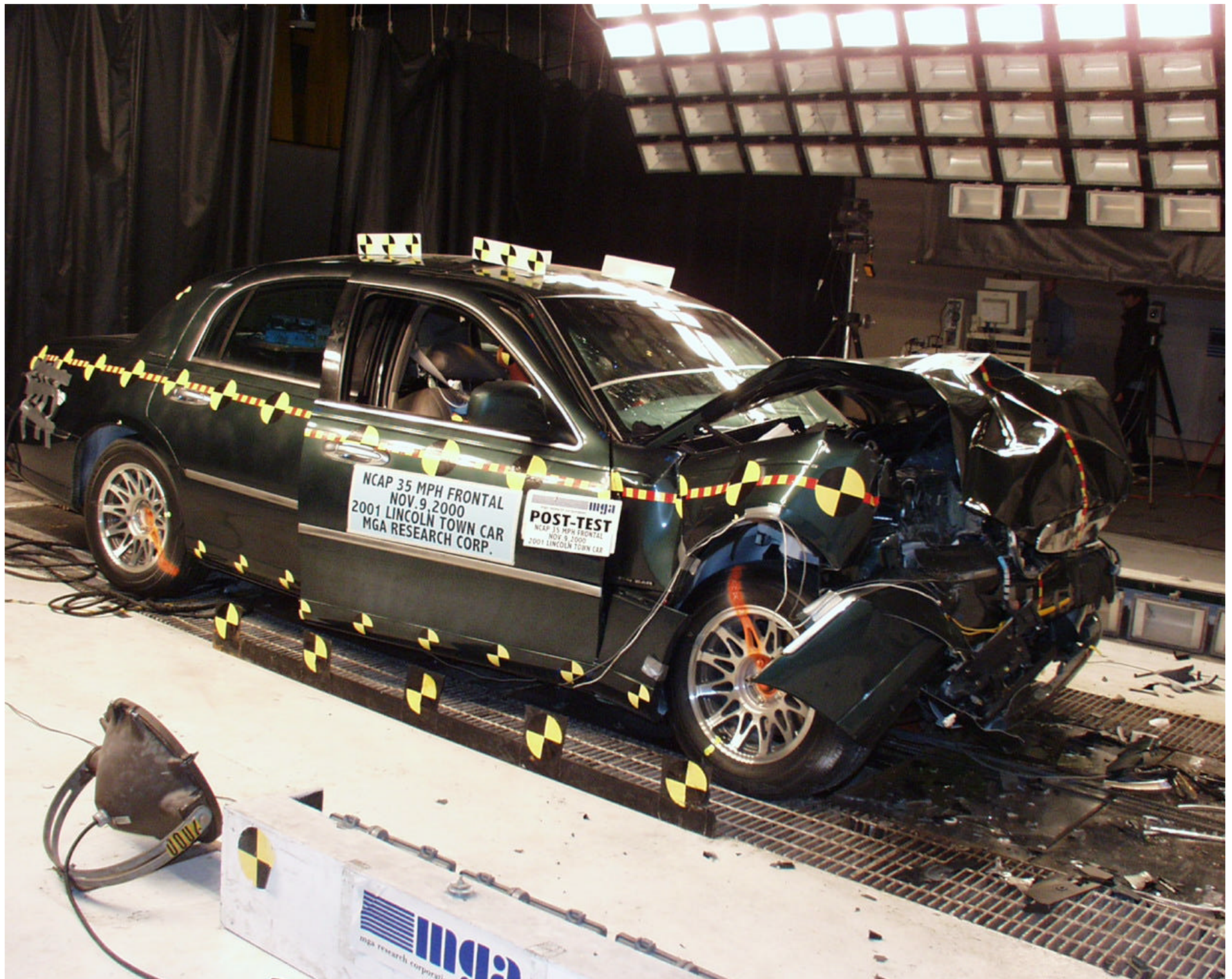


Photo No. A-11 - Post-Test Right Front Three-Quarter View of Test Vehicle



Photo No. A-12 - Pre-Test Fuel Filler Cap View

A-13



Photo No. A-13 - Pre-Test Engine Compartment View

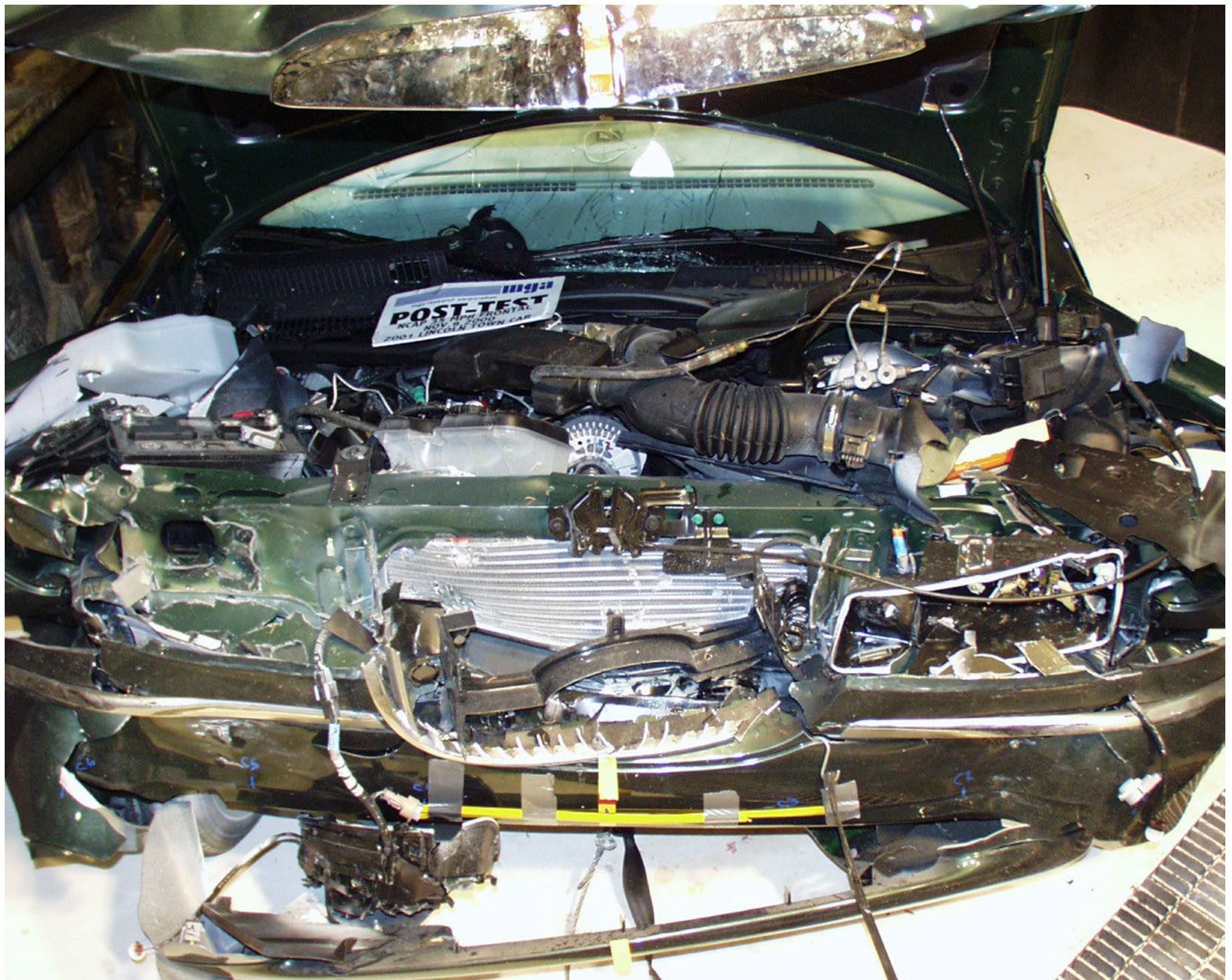


Photo No. A-14 - Post-Test Engine Compartment View

A-15



Photo No. A-15 - Pre-Test Front Underbody View

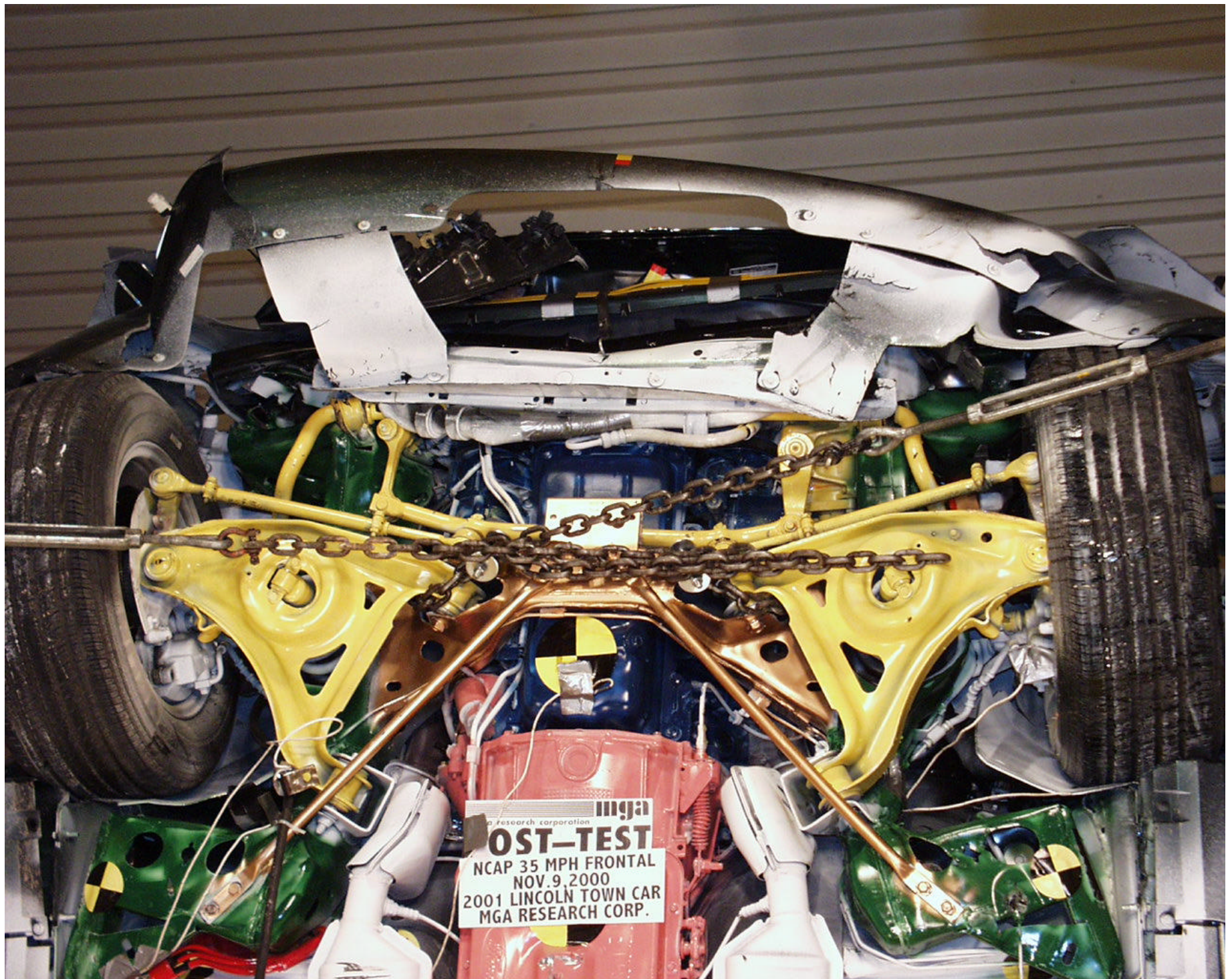


Photo No. A-16 - Post-Test Front Underbody View

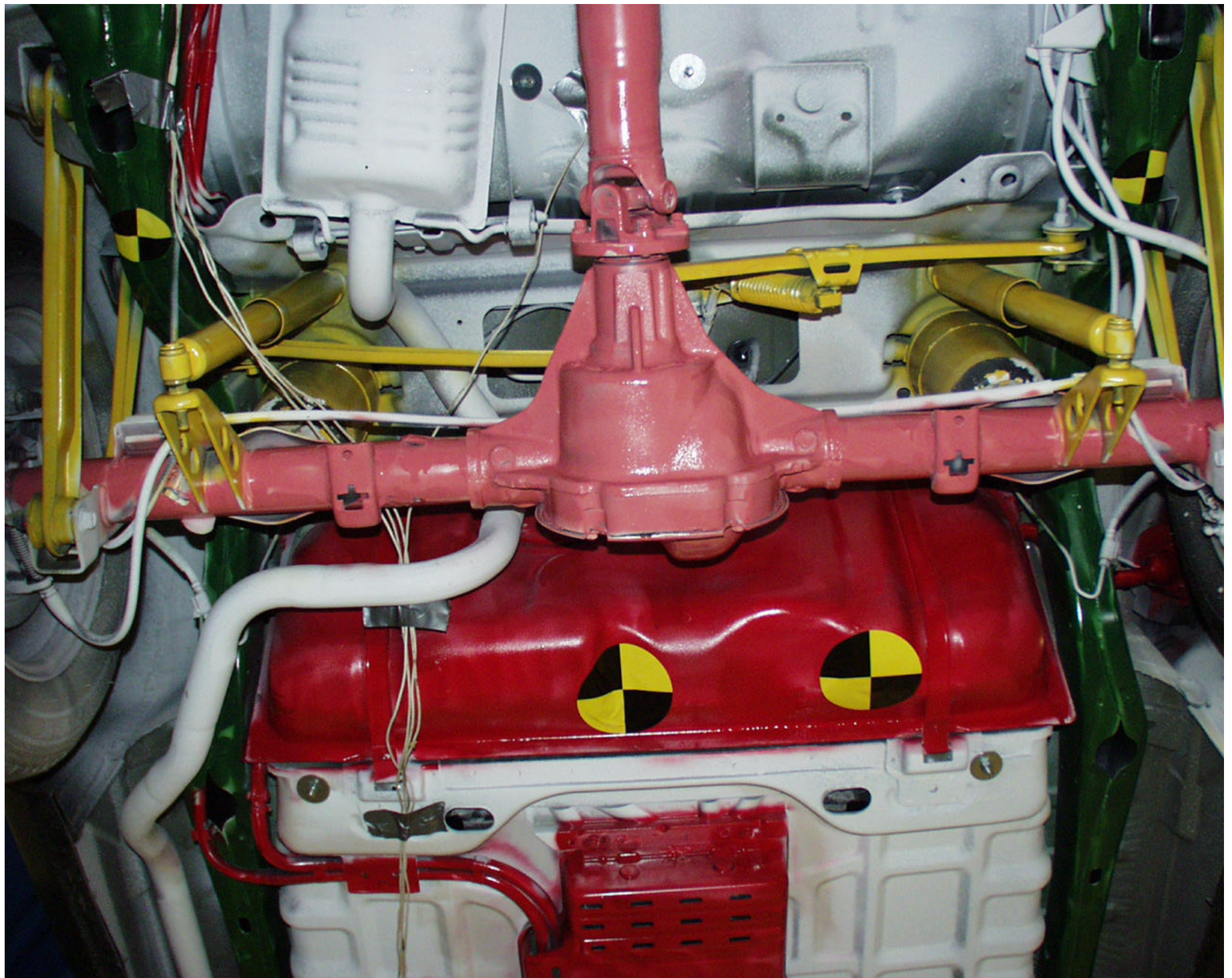


Photo No. A-17 - Pre-Test Rear Underbody View

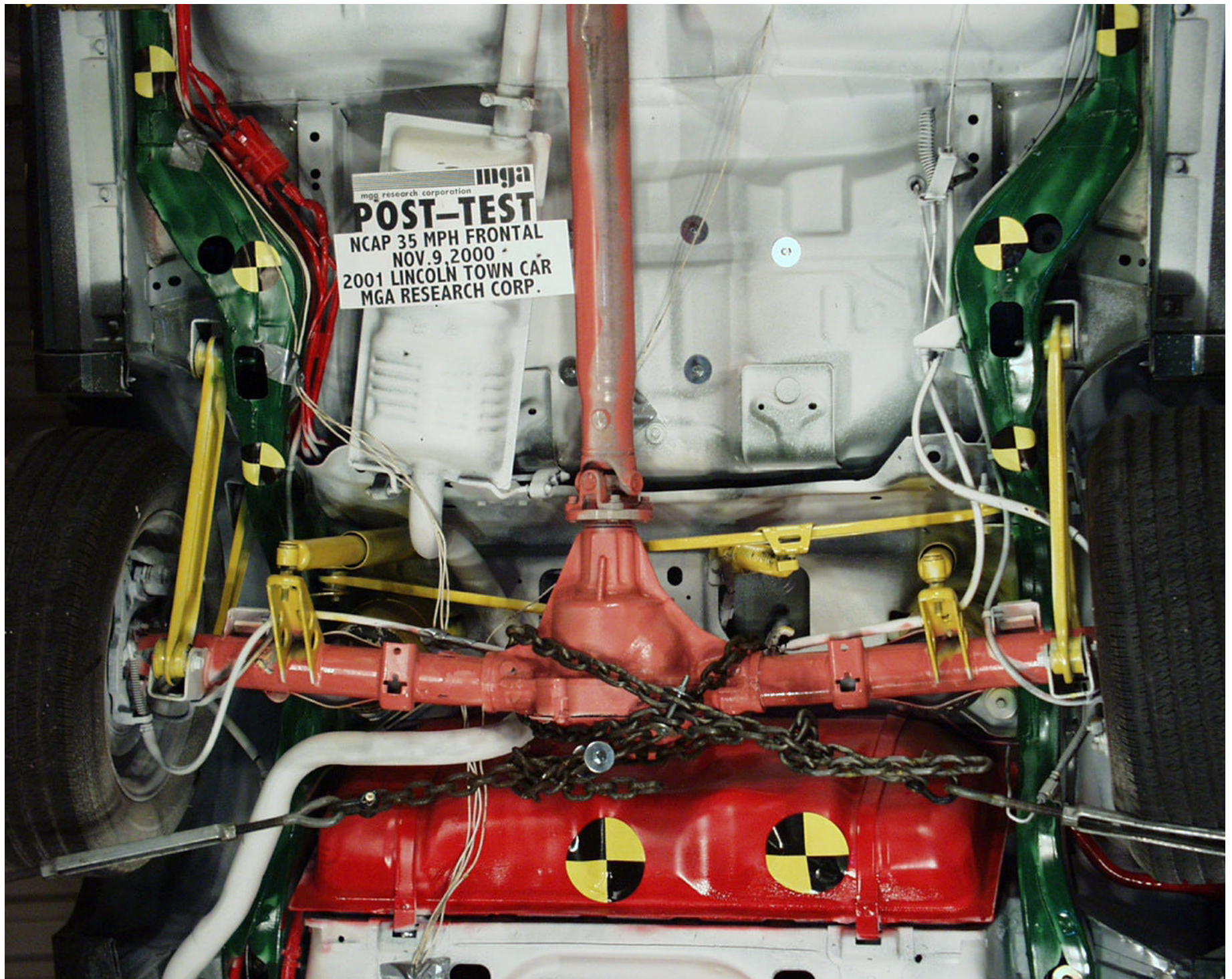


Photo No. A-18 - Post-Test Rear Underbody View



Photo No. A-19 - Post-Test Windshield View



Photo No. A-20 - Pre-Test Driver Dummy Position Left Side View

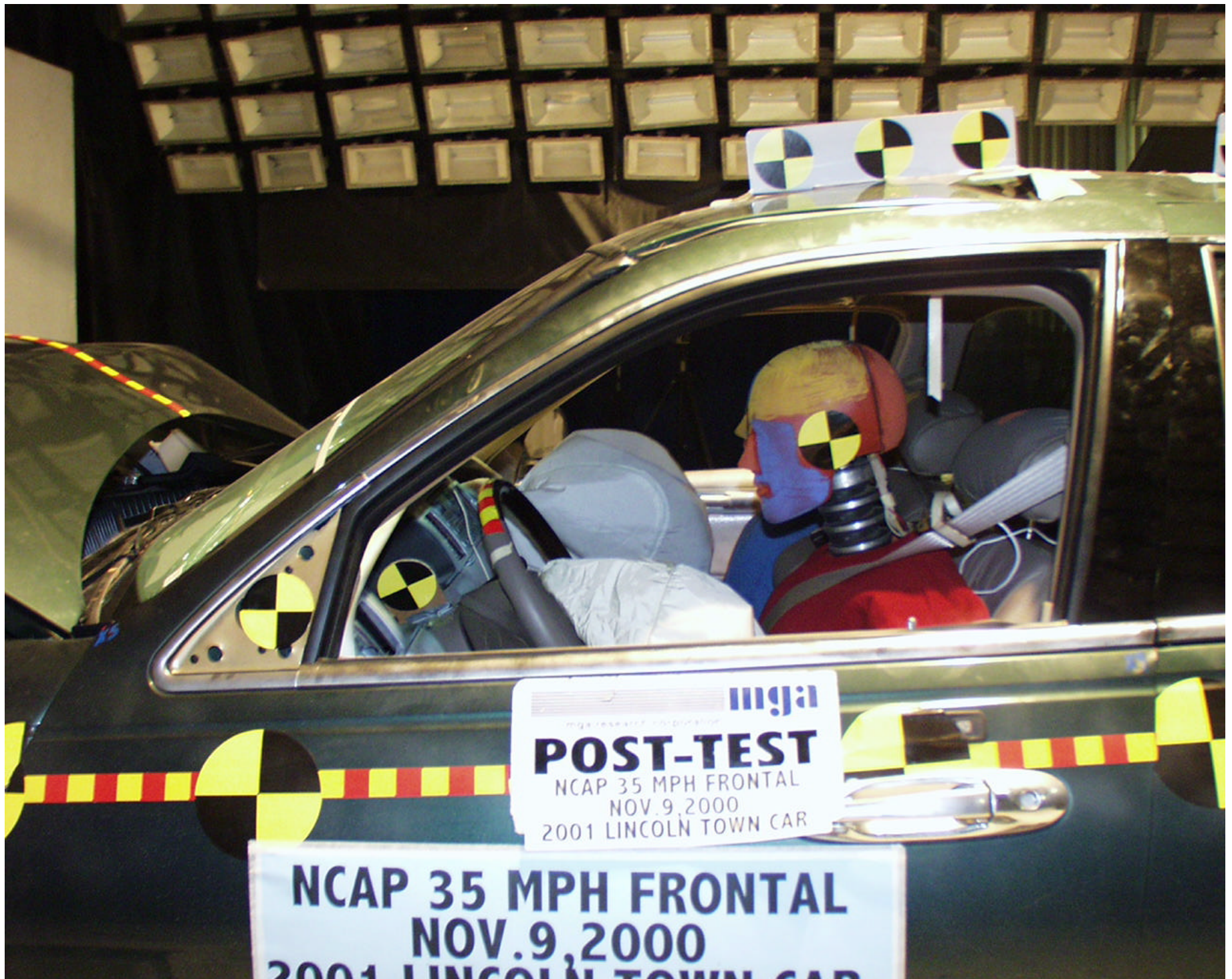


Photo No. A-21 - Post-Test Driver Dummy Position Left Side View



Photo No. A-22 - Pre-Test Driver Dummy Position Left Side View (Door Open)



Photo No. A-23 - Post-Test Driver Dummy Position Left Side View (Door Open)



Photo No. A-24 - Pre-Test Driver Seat Position View

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Photo No. A-25 - Post-Test Driver Seat Position View



Photo No. A-26 - Pre-Test Driver Dummy Knee Position

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Photo No. A-27 - Post-Test Driver Dummy Knee Position



Photo No. A-28 - Post-Test Driver Airbag Contact

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Photo No. A-29 - Post-Test Driver Knee Contact View

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Photo No. A-30 - Pre-Test Driver Windshield View

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Photo No. A-31 - Post-Test Driver Windshield View

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Photo No. A-32 - Pre-Test Passenger Dummy Position Right Side View

A-33



Photo No. A-33 - Post-Test Passenger Dummy Position Right Side View



Photo No. A-34 - Pre-Test Pass. Dummy Position Right Side View (Door Open)



Photo No. A-35 - Post-Test Pass. Dummy Position Right Side View (Door Open)



Photo No. A-36 - Pre-Test Passenger Seat Position View

A-37



Photo No. A-37 - Post-Test Passenger Seat Position View



Photo No. A-38 - Pre-Test Passenger Dummy Knee Position



Photo No. A-39 - Post-Test Passenger Dummy Knee Position

A-40



Photo No. A-40 - Post-Test Passenger Airbag Contact

A-41



Photo No. A-41 - Pre-Test Passenger Windshield View

A-42



Photo No. A-42 - Post-Test Passenger Windshield View

MFD. BY FORD MOTOR CO. IN U.S.A.

DATE: 10/00

FRONT GAWR: 1214KG/2677LB

GVWR: 2449KG/5400LB

REAR GAWR: 1260KG/2778LB

THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR
VEHICLE SAFETY, BUMPER, AND THEFT PREVENTION STANDARDS
IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.

VIN: 1LNHM82W11Y633287 TYPE: PASSENGER

MAXIMUM LOAD = OCCUPANTS + LUGGAGE = 499KG/1100LB

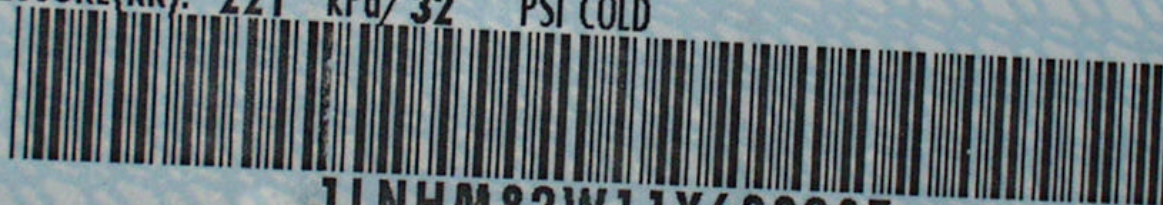
OCCUPANTS = 6 TOTAL; 3 FR, 3 RR

LUGGAGE = 091KG/0200LB

TIRE: P225/60SR16

PRESSURE(FR): 221 kPa/ 32 PSI COLD

PRESSURE(RR): 221 kPa/ 32 PSI COLD



1LNHM82W11Y633287

TRAILER TOWING - SEE OWNER GUIDE

EXT PNT: FT

BRK

INT TR

TP/PS

R

AXLE

IRC: 45

DSO:

TR

SPR

IVCIS

F0083

R0093

4

SH

L

JY

U

B05

UBC

▽F8DB-5420472-AB



Photo No. A-44 - Vehicle Impact

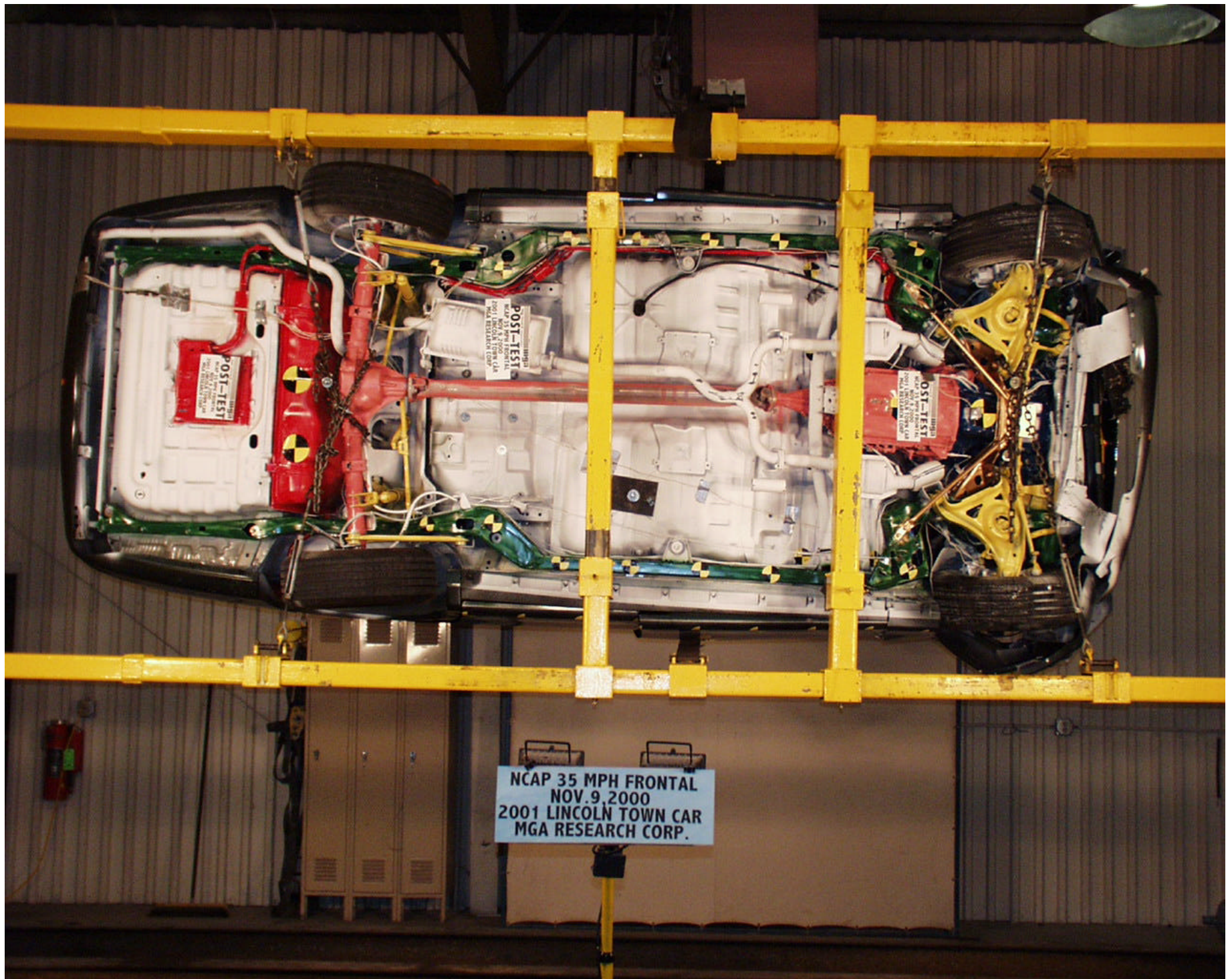


Photo No. A-45 - Rollover 90E



A-46

Photo No. A-46 - Rollover 180E

A-47



Photo No. A-47 - Rollover 270E



Photo No. A-48 - Rollover 360E

APPENDIX B
VEHICLE, LOAD CELL BARRIER AND DUMMY RESPONSE DATA

2001 Lincoln Town Car 4 Door Sedan

VEHICLE DATA FILTER CHANNEL CLASS

Head Accelerations 1000 (1650 Hz)

Chest Accelerations 180 (300 Hz)

Vehicle Accelerations 60 (100 Hz)

Barrier Load Cells 60 (100 Hz)

Femur Load Cells 600 (1000 Hz)

Lap and Torso Belts 60 (100 Hz)

Occupant Data

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* No valid data after 160 msec.

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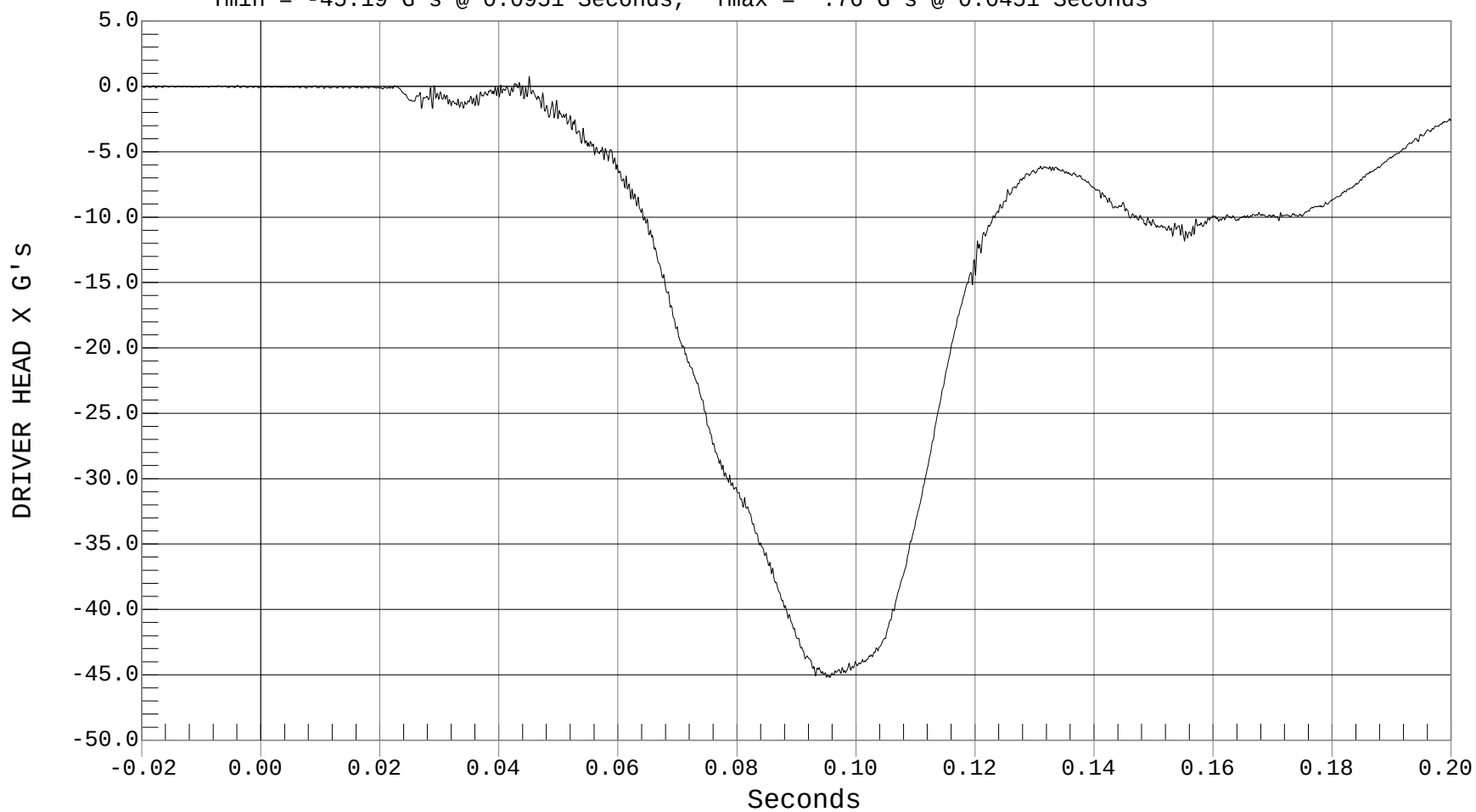
DRIVER HEAD X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 1000

— 1 DRIVER HEAD X, b00095AT.A01

Ymin = -45.19 G's @ 0.0951 Seconds, Ymax = .76 G's @ 0.0451 Seconds





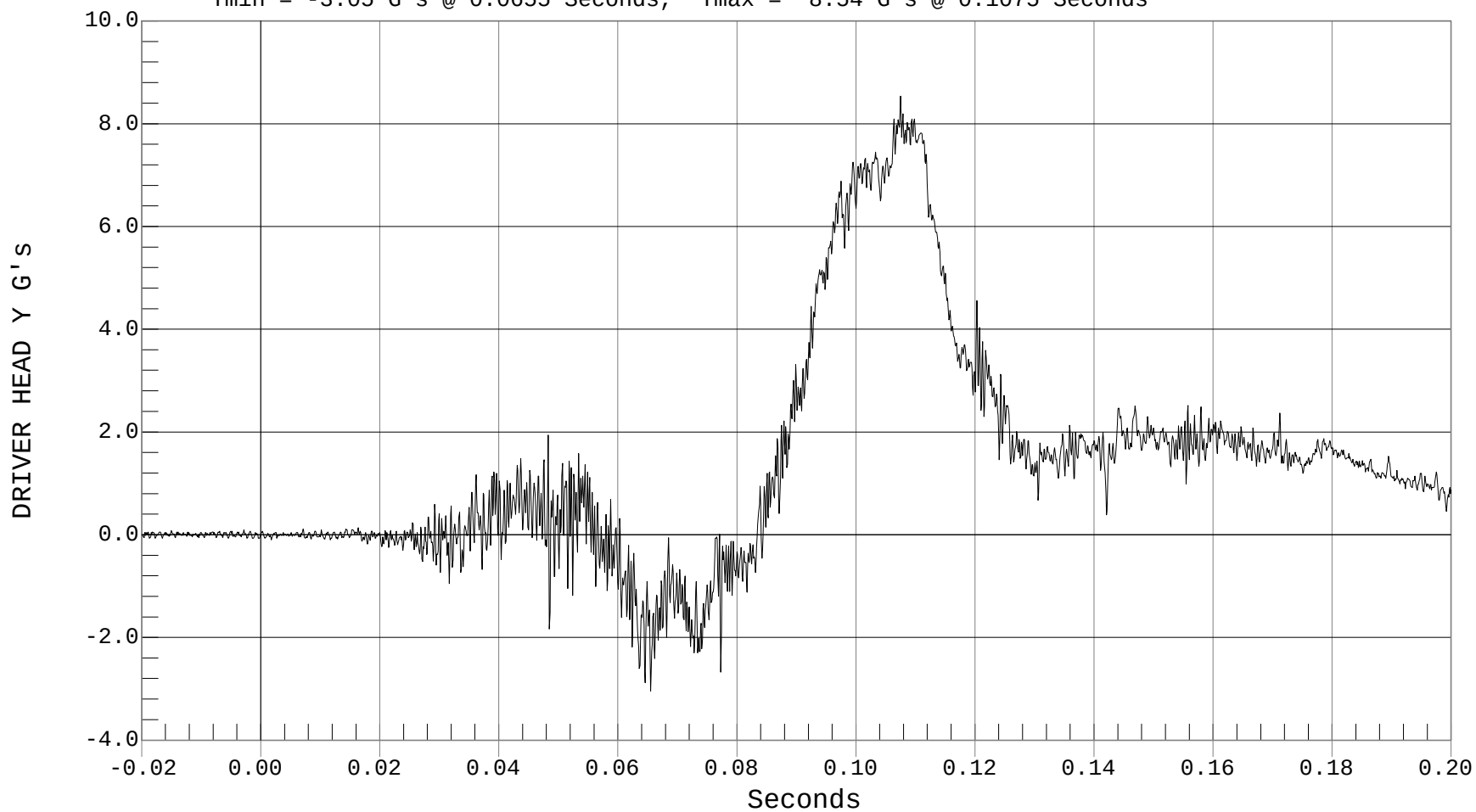
DRIVER HEAD Y ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 1000

— 1 DRIVER HEAD Y, b00095AT.A02

Ymin = -3.05 G's @ 0.0655 Seconds, Ymax = 8.54 G's @ 0.1075 Seconds





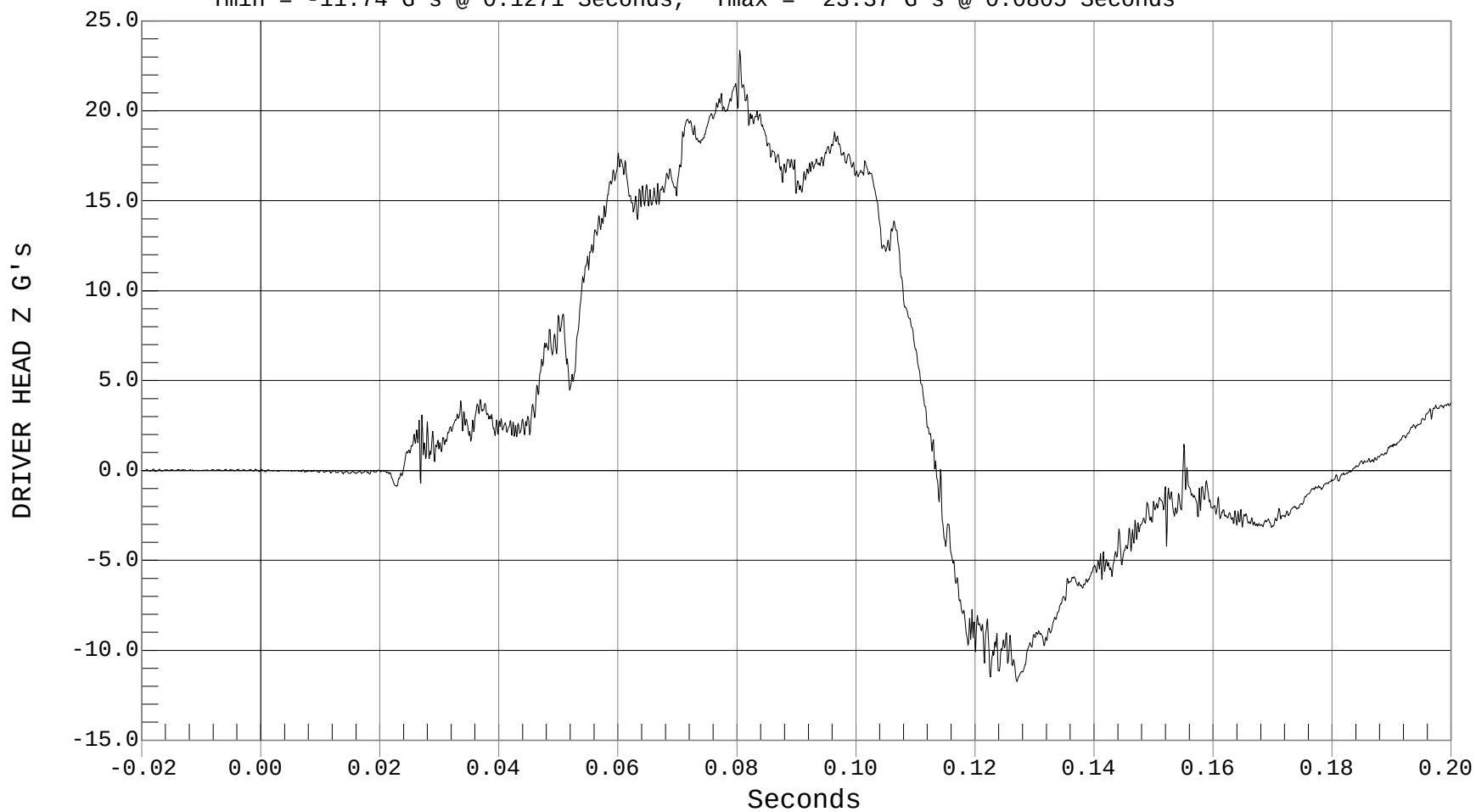
DRIVER HEAD Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 1000

— 1 DRIVER HEAD Z, b00095AT.A03

Ymin = -11.74 G's @ 0.1271 Seconds, Ymax = 23.37 G's @ 0.0805 Seconds





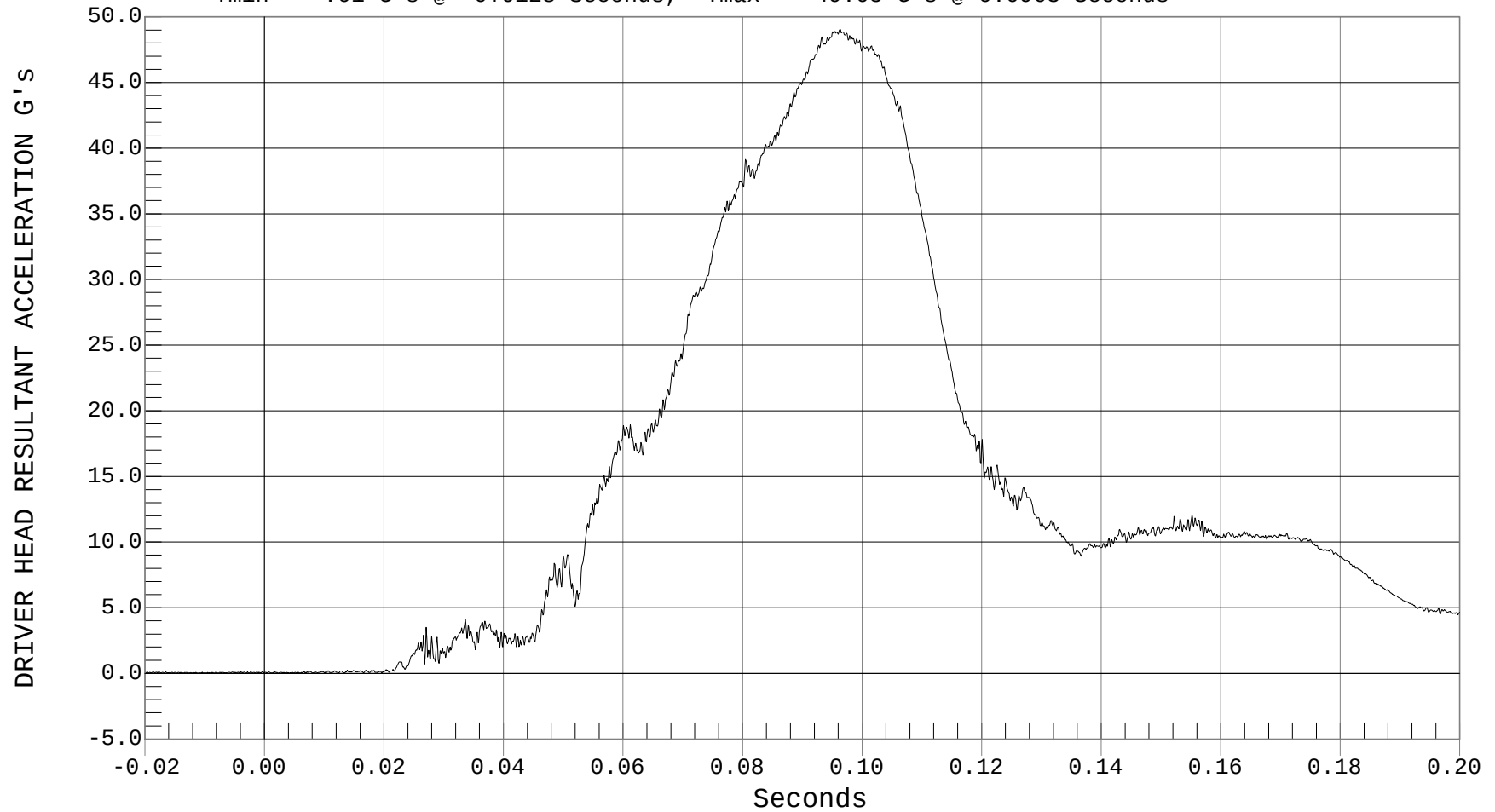
DRIVER HEAD RESULTANT ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 1000

— 1 DRIVER HEAD RESULTANT ACCELERATION, b00095AV.A01

Ymin = .01 G's @ -0.0128 Seconds, Ymax = 49.05 G's @ 0.0963 Seconds





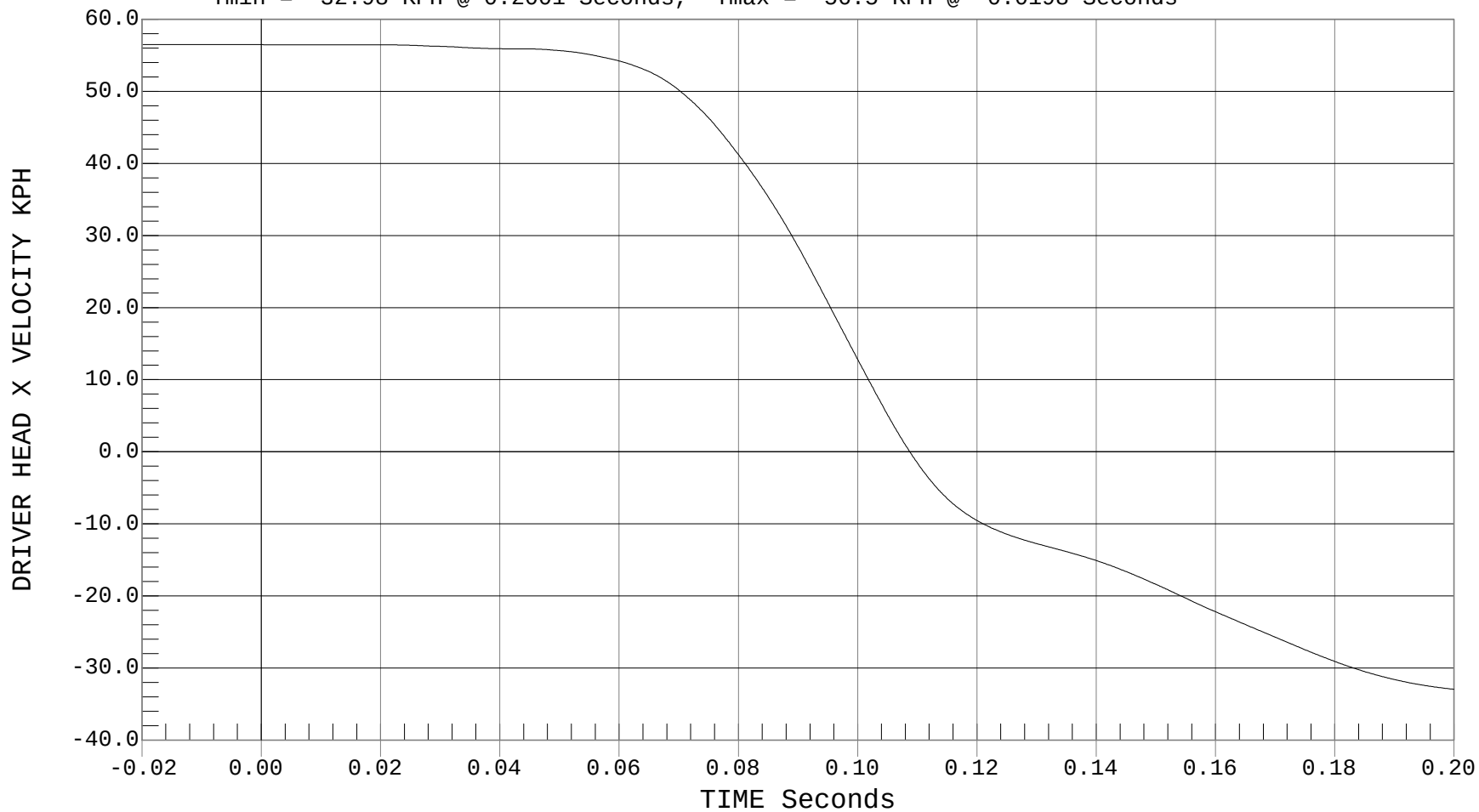
DRIVER HEAD X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 DRIVER HEAD X VELOCITY, b00095AI.V01

Ymin = -32.98 KPH @ 0.2001 Seconds, Ymax = 56.5 KPH @ -0.0198 Seconds





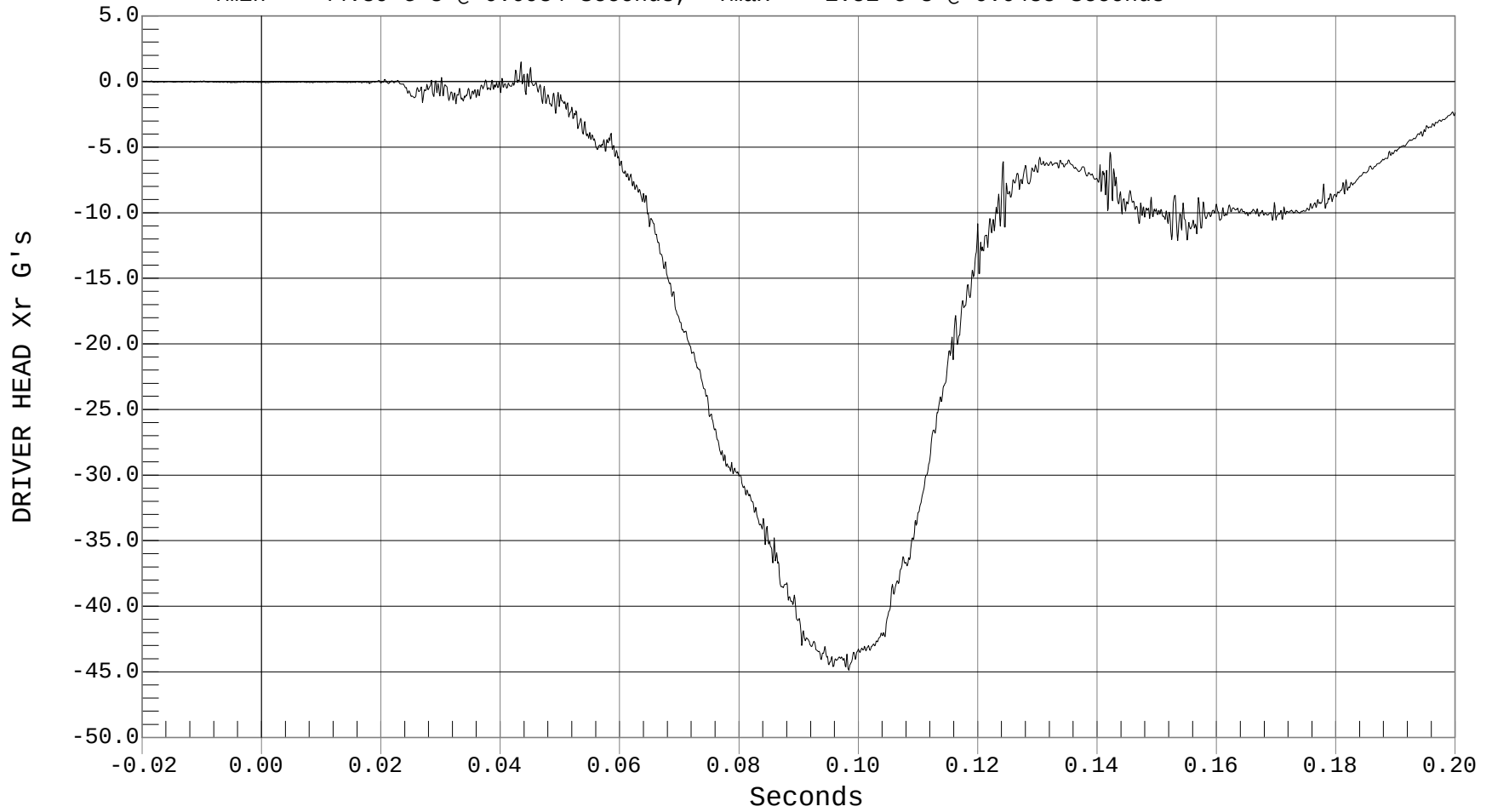
DRIVER HEAD REDUNDANT X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 1000

1 DRIVER HEAD Xr, b00095AT.A33

Ymin = -44.89 G's @ 0.0984 Seconds, Ymax = 1.51 G's @ 0.0435 Seconds





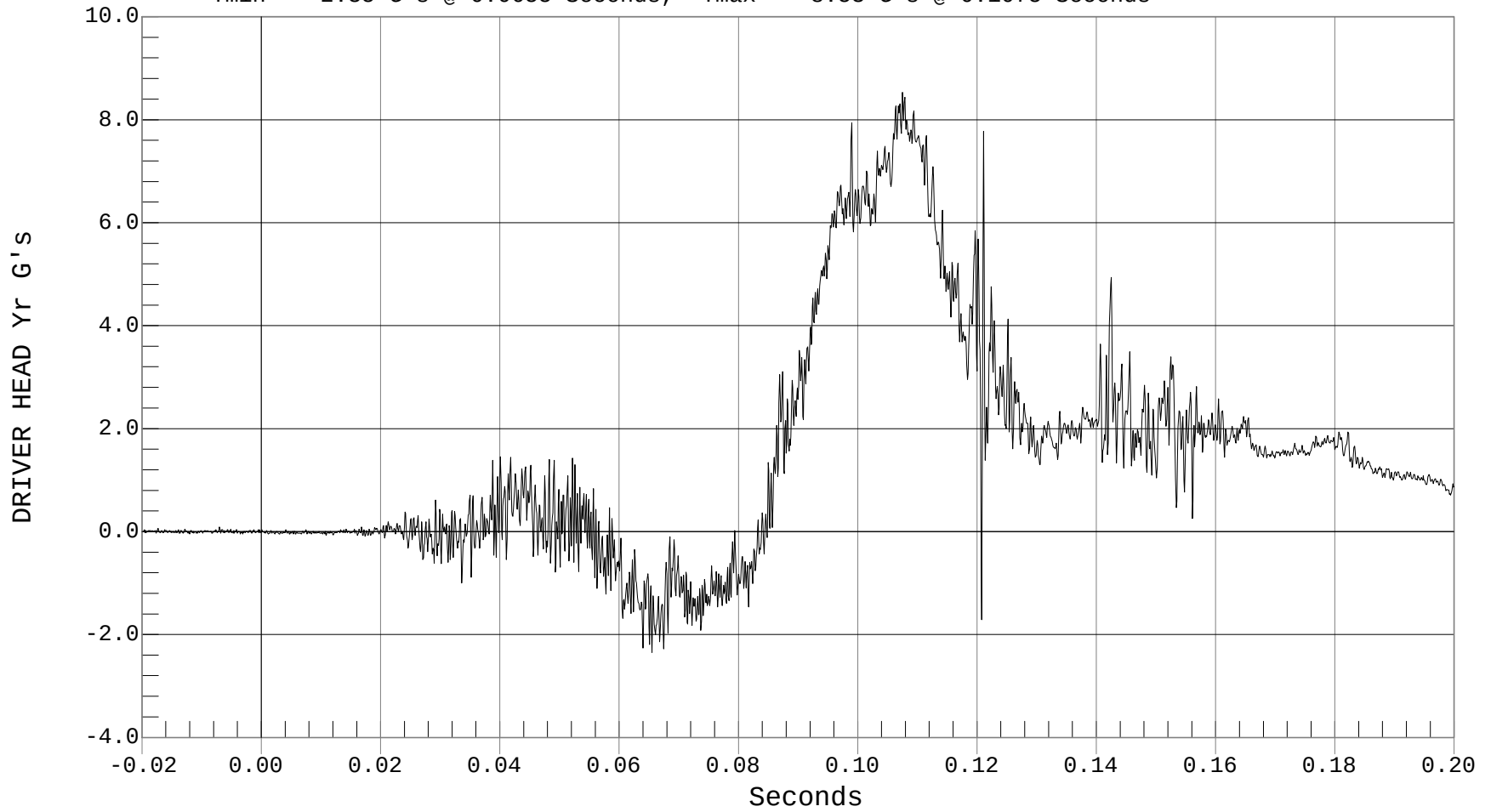
DRIVER HEAD REDUNDANT Y ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 1000

— 1 DRIVER HEAD Yr, b00095AT.A34

Ymin = -2.35 G's @ 0.0655 Seconds, Ymax = 8.53 G's @ 0.1075 Seconds





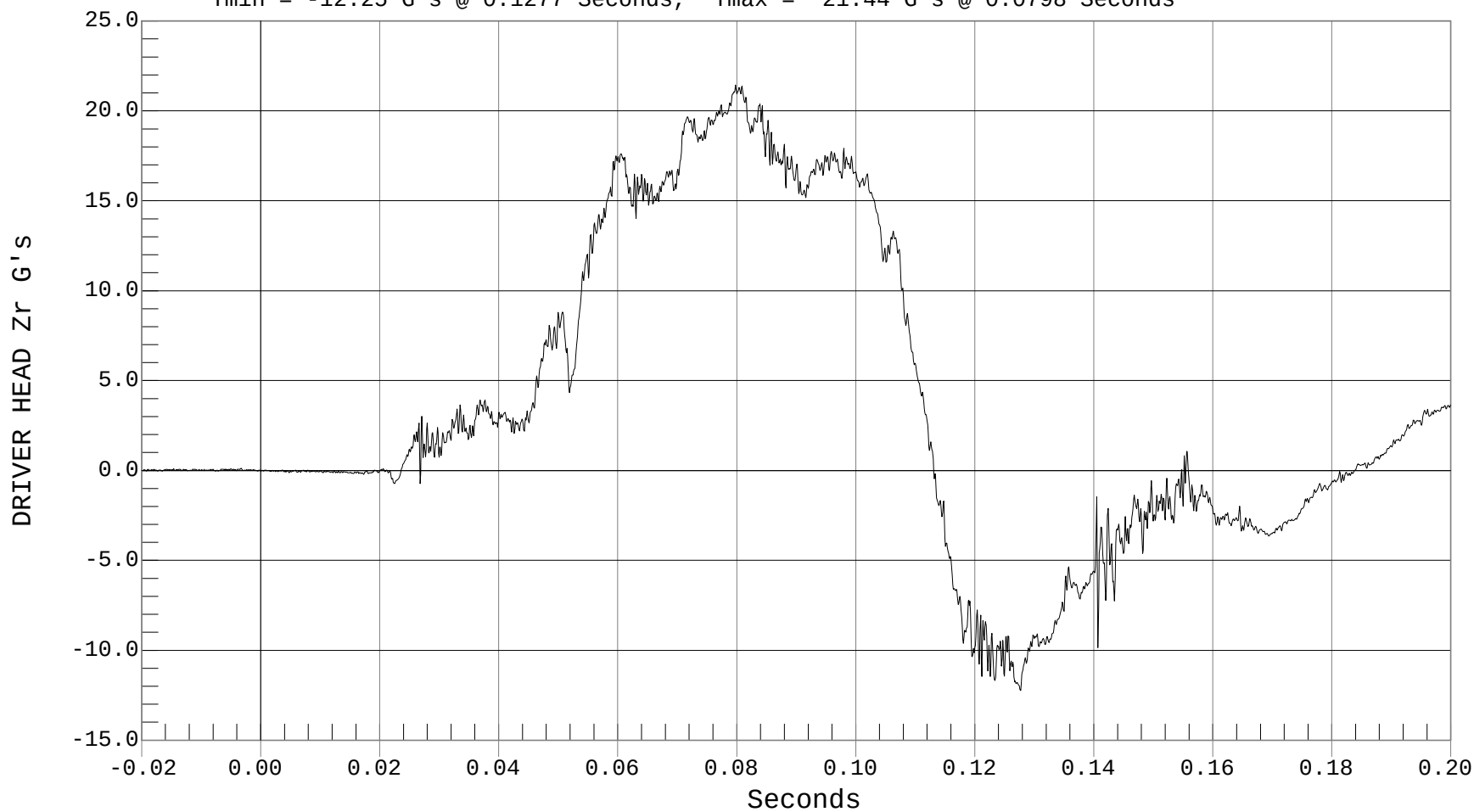
DRIVER HEAD REDUNDANT Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 1000

— 1 DRIVER HEAD Zr, b00095AT.A35

Ymin = -12.25 G's @ 0.1277 Seconds, Ymax = 21.44 G's @ 0.0798 Seconds





DRIVER HEAD REDUNDANT RESULTANT ACCELERATION

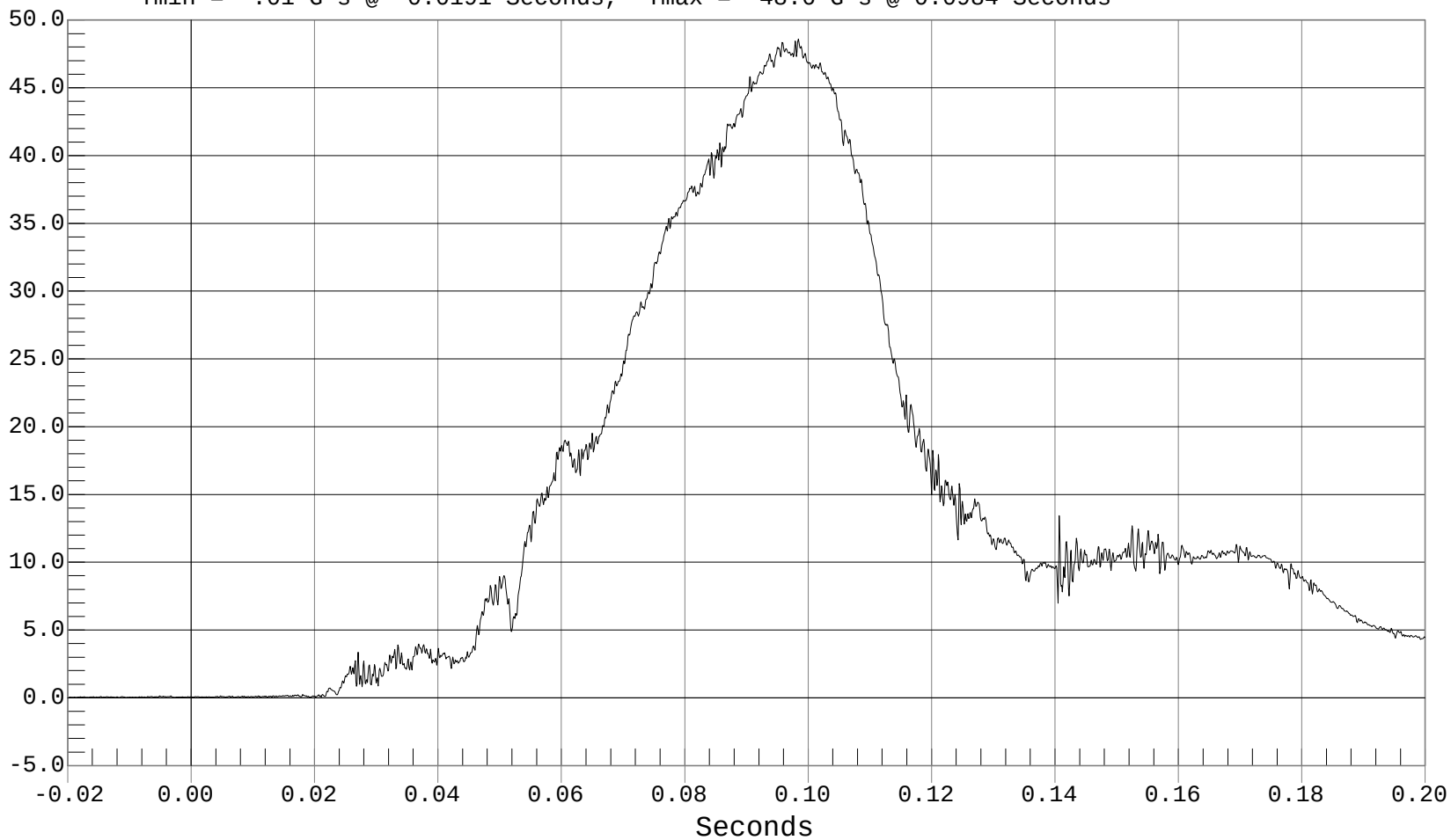
Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 1000

— 1 DRIVER HEAD REDUNDANT RESULTANT ACCELERATION, b00095AV.A33

DRIVER HEAD REDUNDANT RESULTANT ACCELERATION G'S

Ymin = .01 G's @ -0.0191 Seconds, Ymax = 48.6 G's @ 0.0984 Seconds





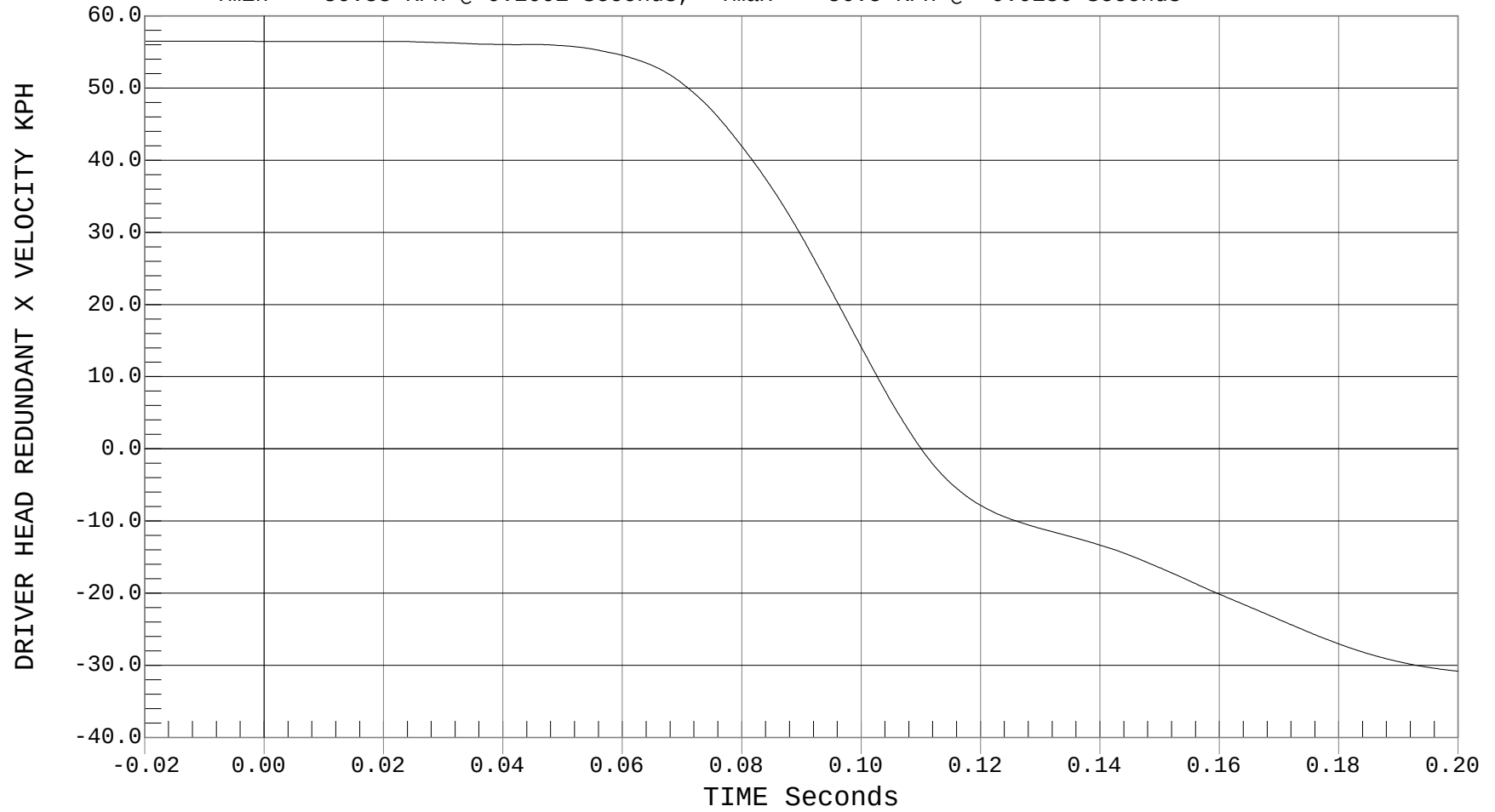
DRIVER HEAD REDUNDANT X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 DRIVER HEAD REDUNDANT X VELOCITY, b00095AI.V33

Ymin = -30.83 KPH @ 0.2001 Seconds, Ymax = 56.5 KPH @ -0.0186 Seconds





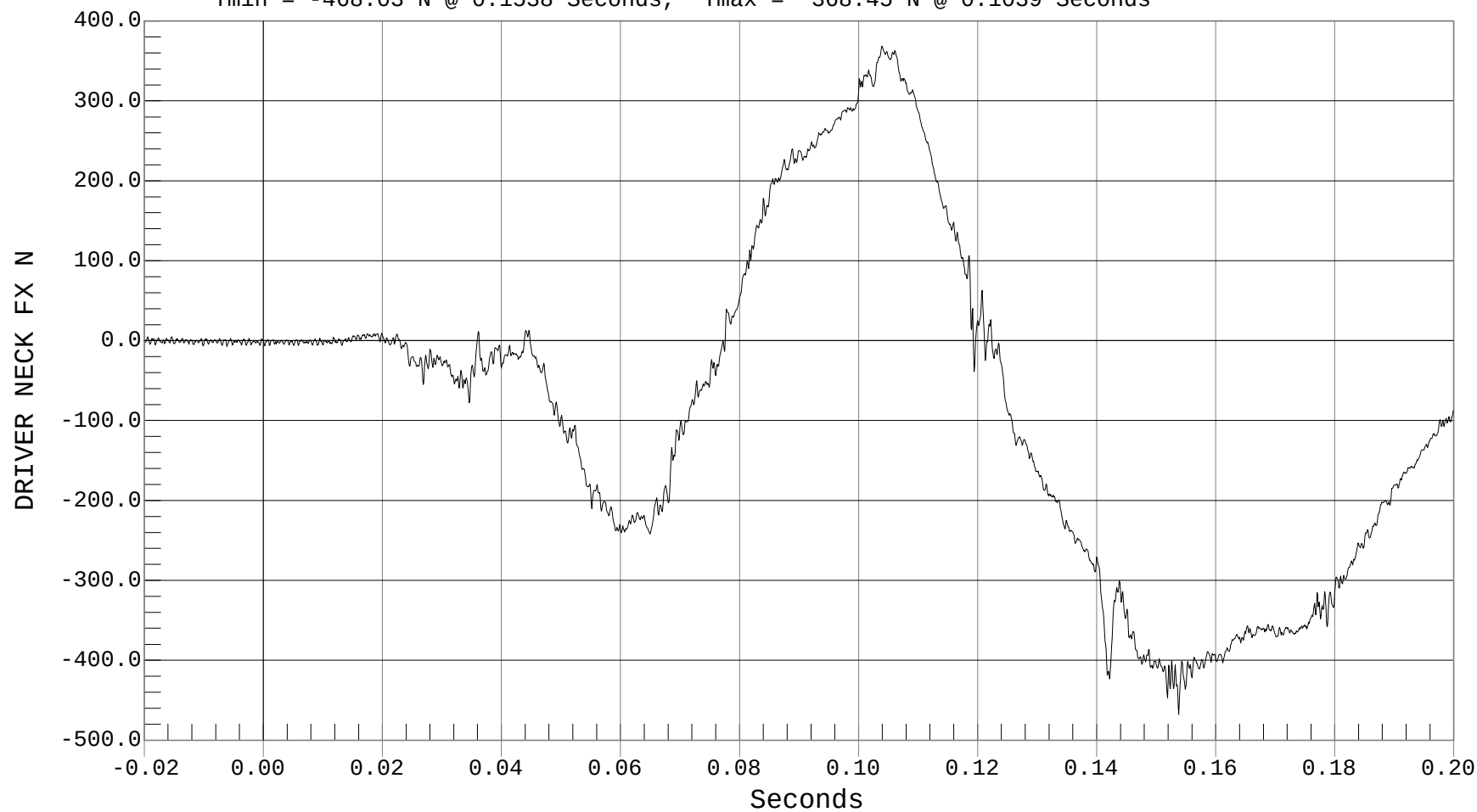
DRIVER NECK FORCE X

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 1000

— 1 DRIVER NECK FX, b00095FT.F04

Ymin = -468.03 N @ 0.1538 Seconds, Ymax = 368.45 N @ 0.1039 Seconds





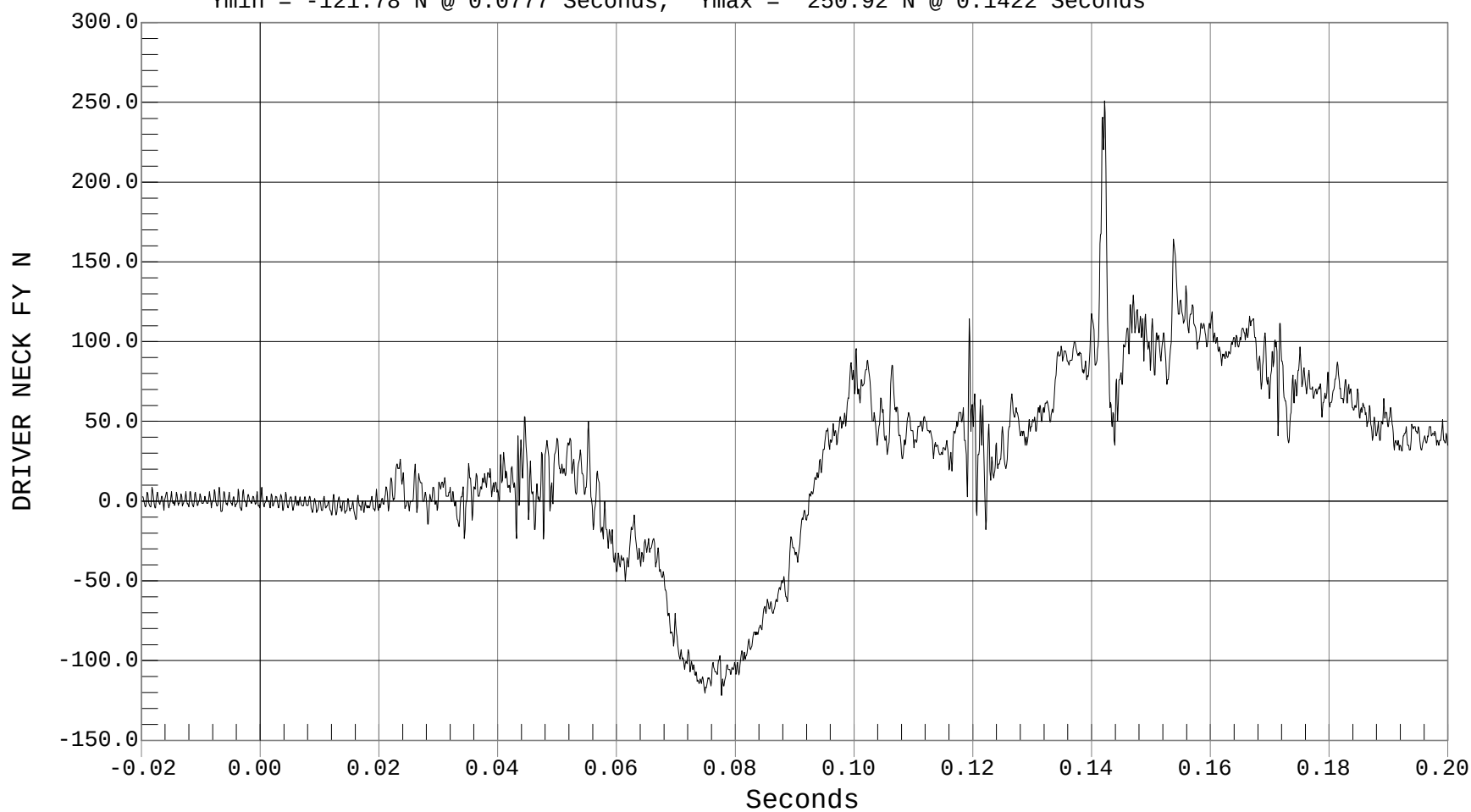
DRIVER NECK FORCE Y

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 1000

— 1 DRIVER NECK FY, b00095FT.F05

Ymin = -121.78 N @ 0.0777 Seconds, Ymax = 250.92 N @ 0.1422 Seconds





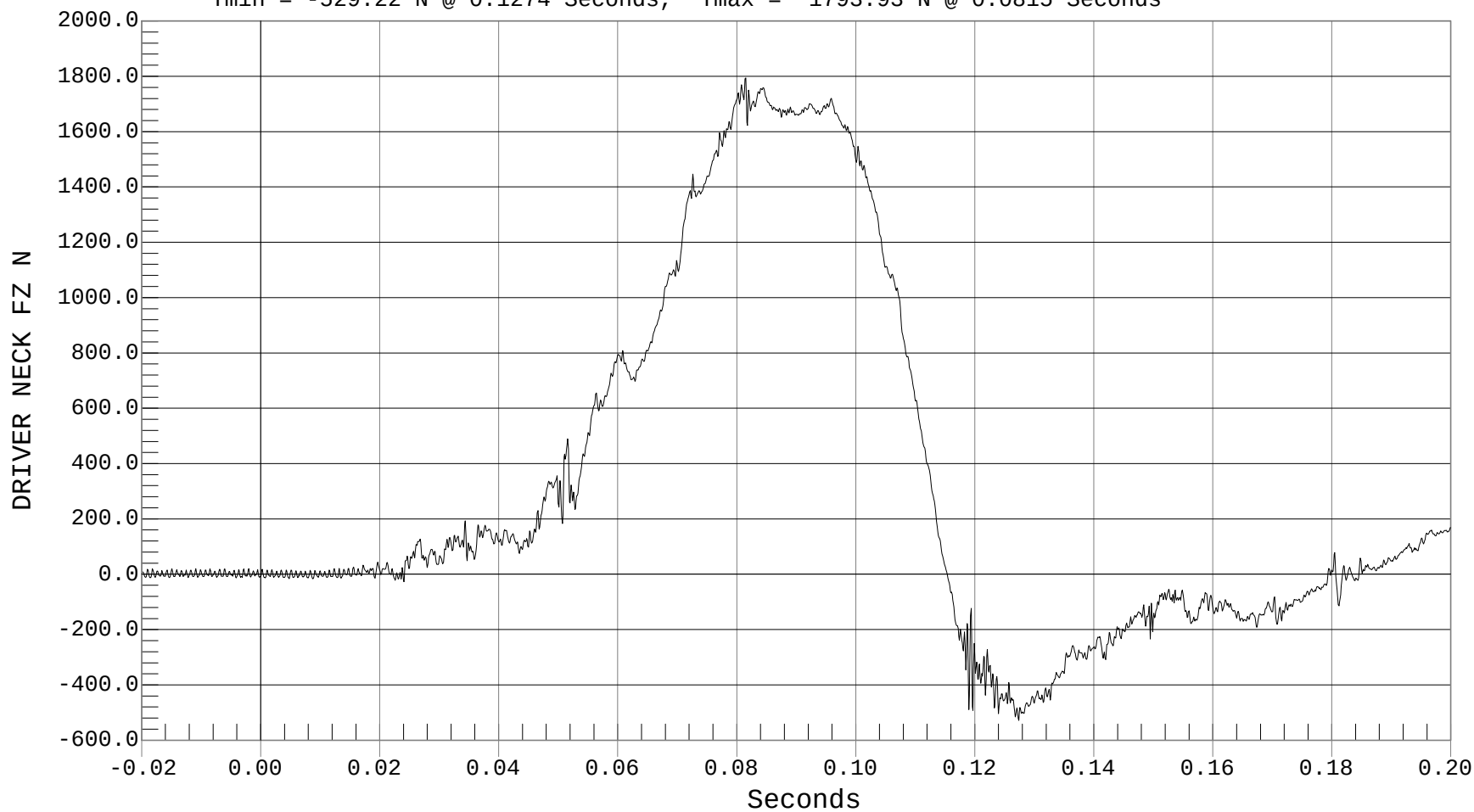
DRIVER NECK FORCE Z

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 1000

— 1 DRIVER NECK FZ, b00095FT.F06

Ymin = -529.22 N @ 0.1274 Seconds, Ymax = 1793.93 N @ 0.0815 Seconds





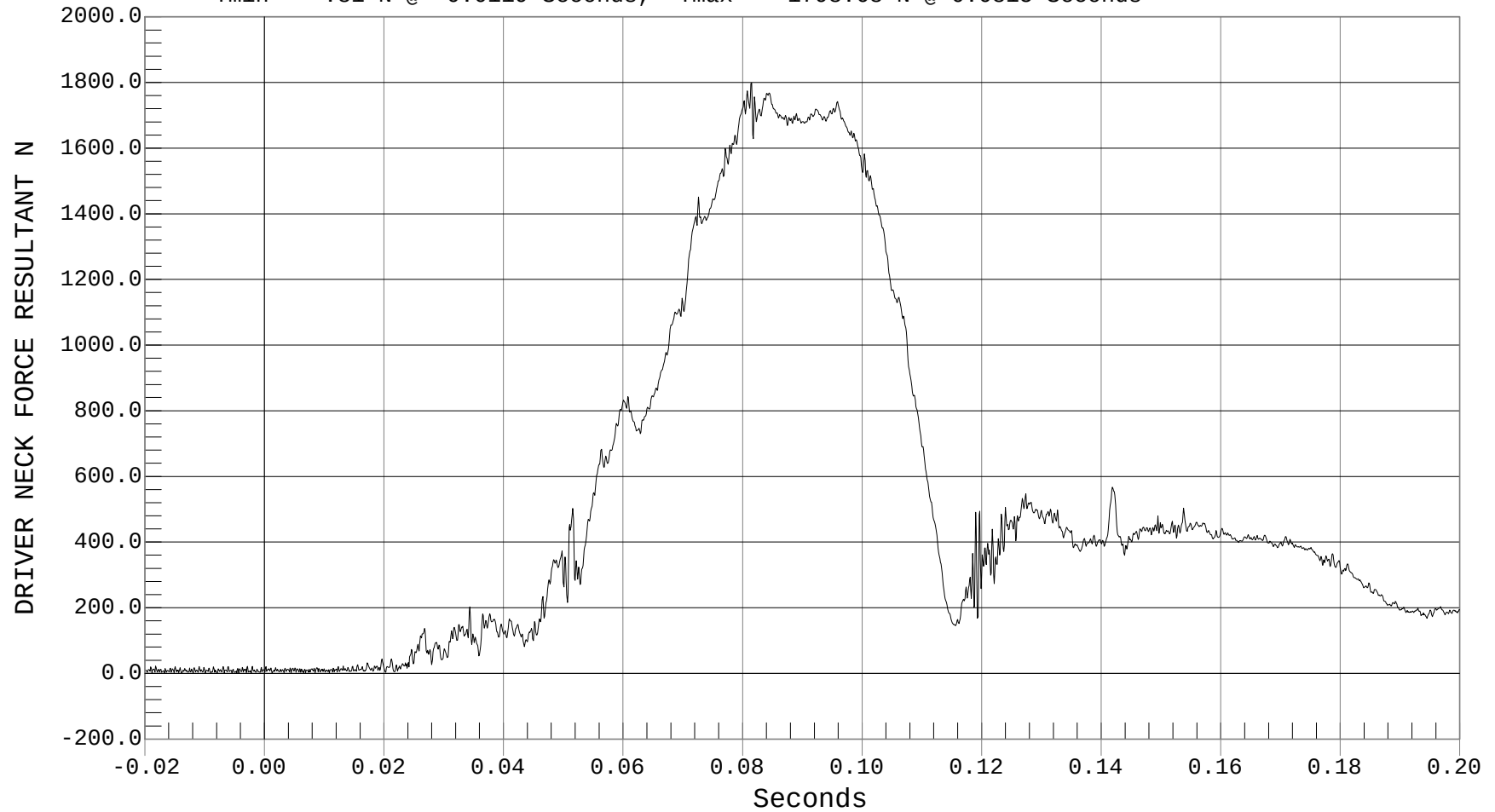
DRIVER NECK FORCE RESULTANT

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 1000

— 1 DRIVER NECK FORCE RESULTANT, b00095FV.F04

Ymin = .81 N @ -0.0119 Seconds, Ymax = 1798.68 N @ 0.0815 Seconds





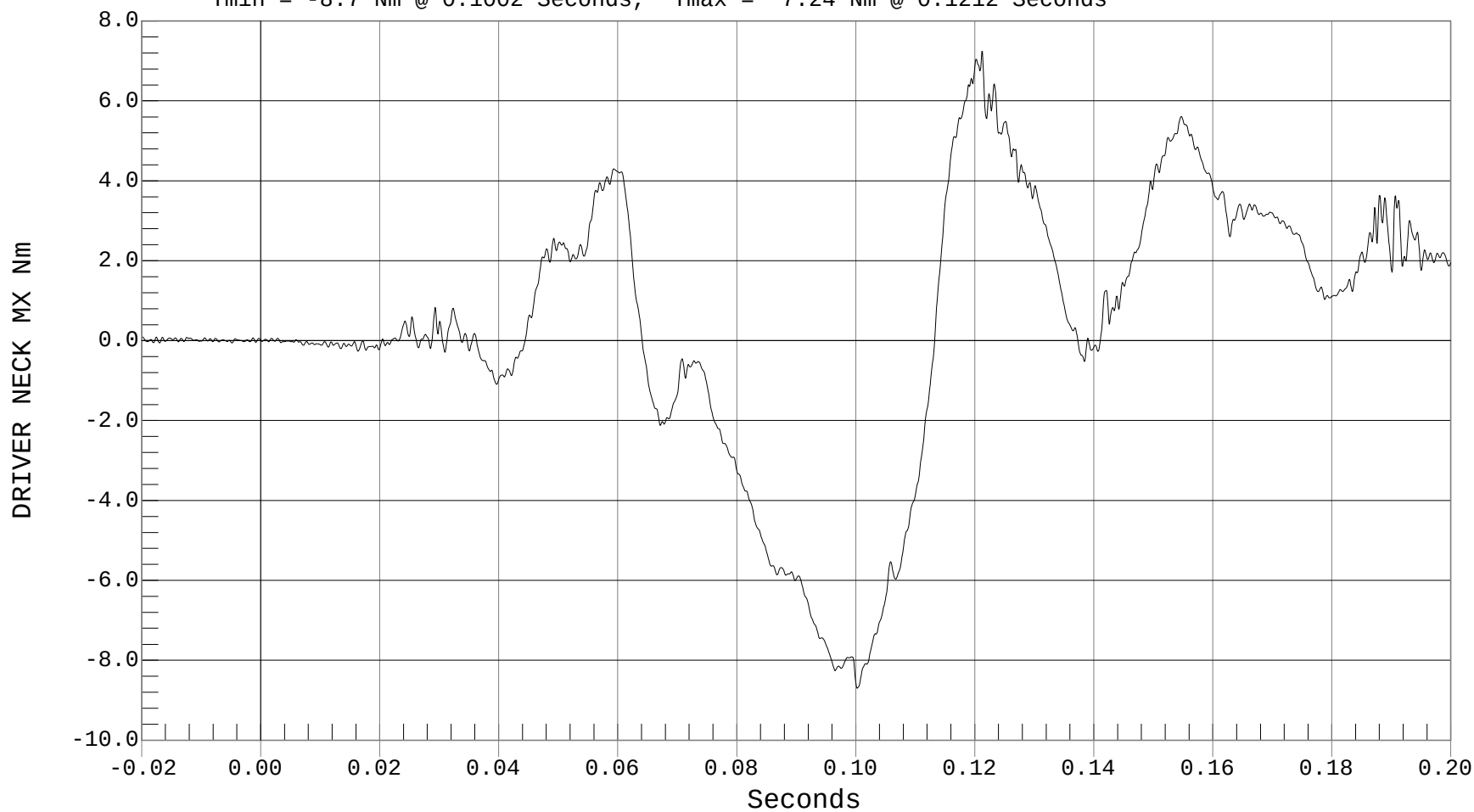
DRIVER NECK MOMENT X

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 600

— 1 DRIVER NECK MX, b00095MF.M07

Ymin = -8.7 Nm @ 0.1002 Seconds, Ymax = 7.24 Nm @ 0.1212 Seconds





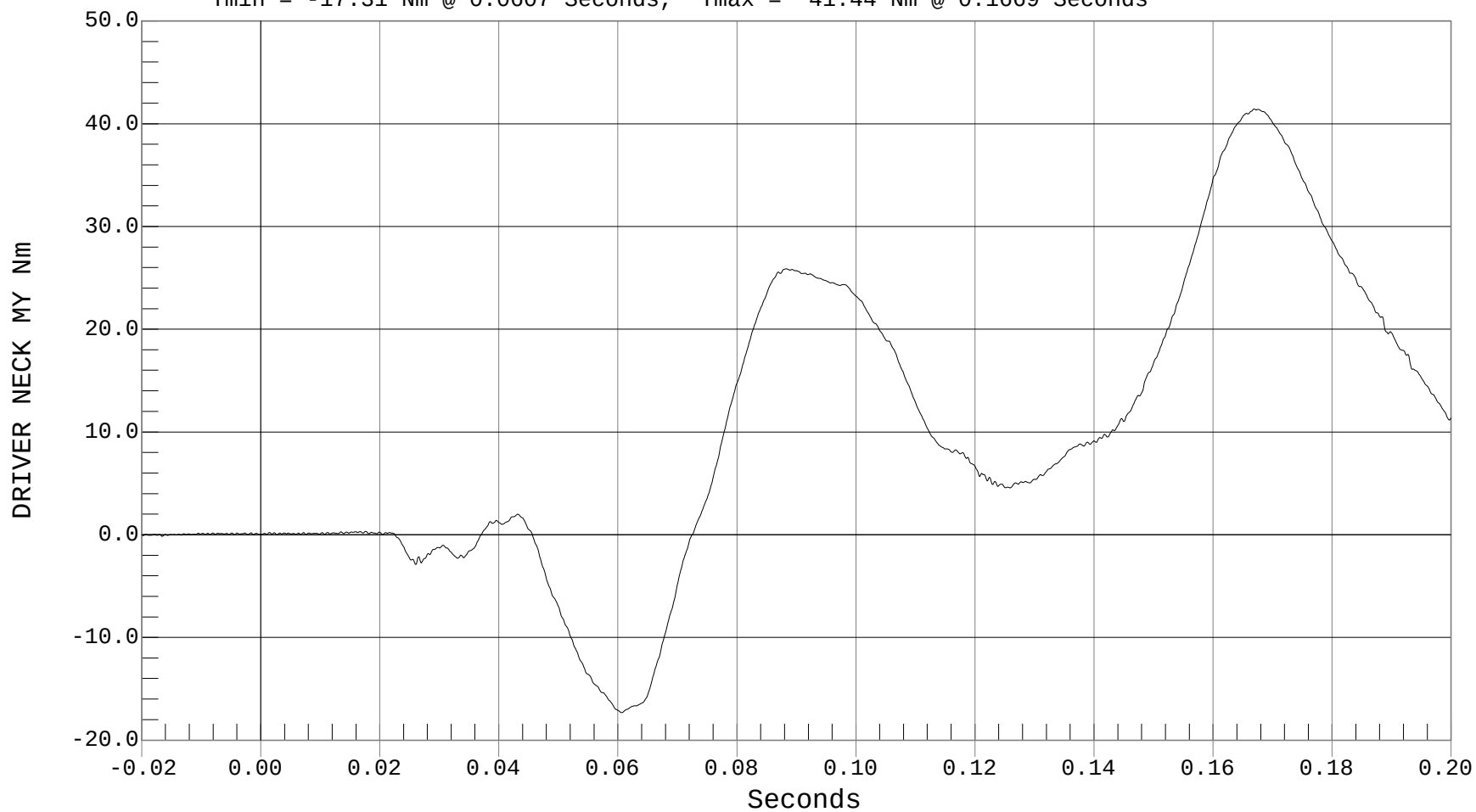
DRIVER NECK MOMENT Y

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 600

— 1 DRIVER NECK MY, b00095MF.M08

Ymin = -17.31 Nm @ 0.0607 Seconds, Ymax = 41.44 Nm @ 0.1669 Seconds





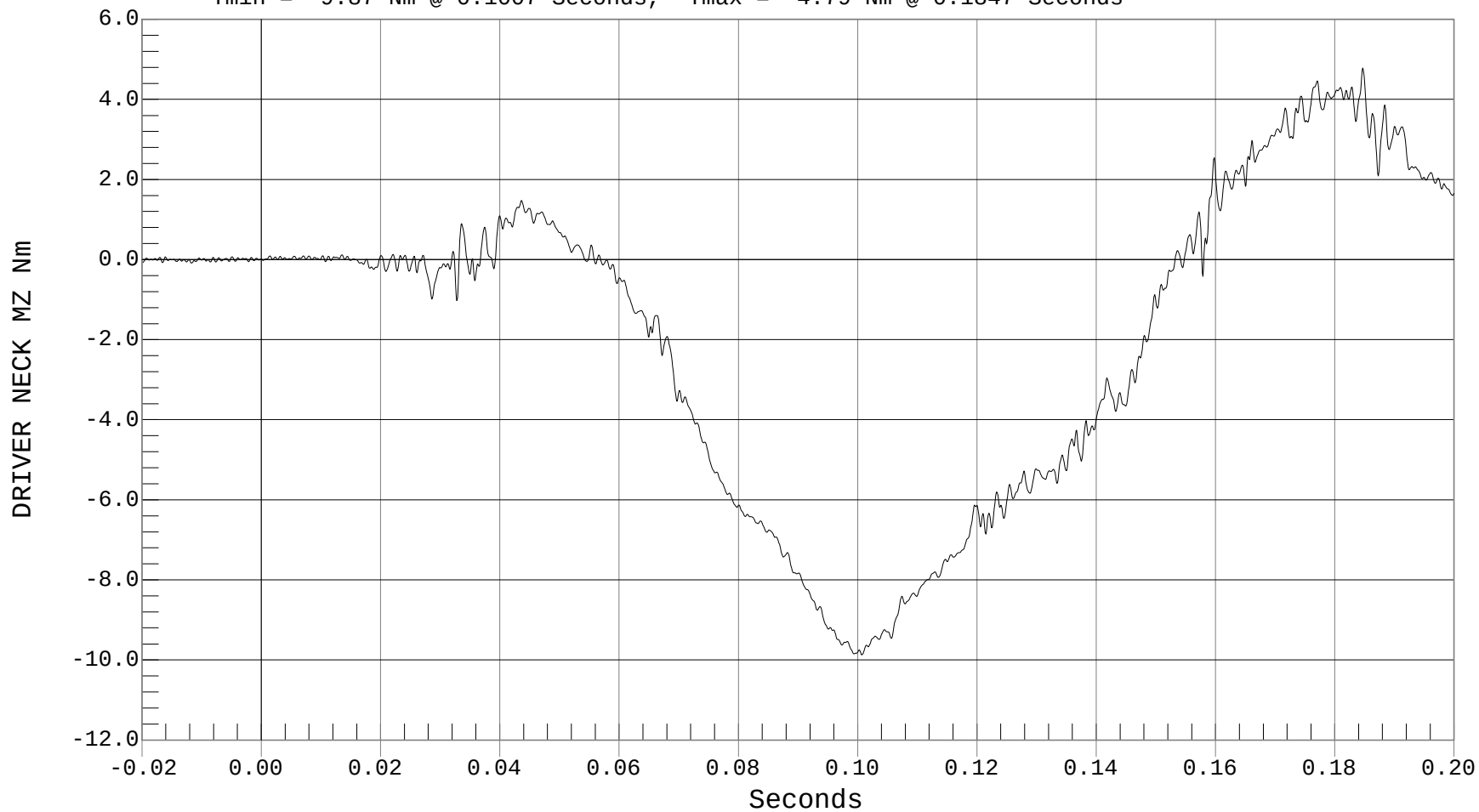
DRIVER NECK MOMENT Z

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 600

— 1 DRIVER NECK MZ, b00095MF.M09

Ymin = -9.87 Nm @ 0.1007 Seconds, Ymax = 4.79 Nm @ 0.1847 Seconds





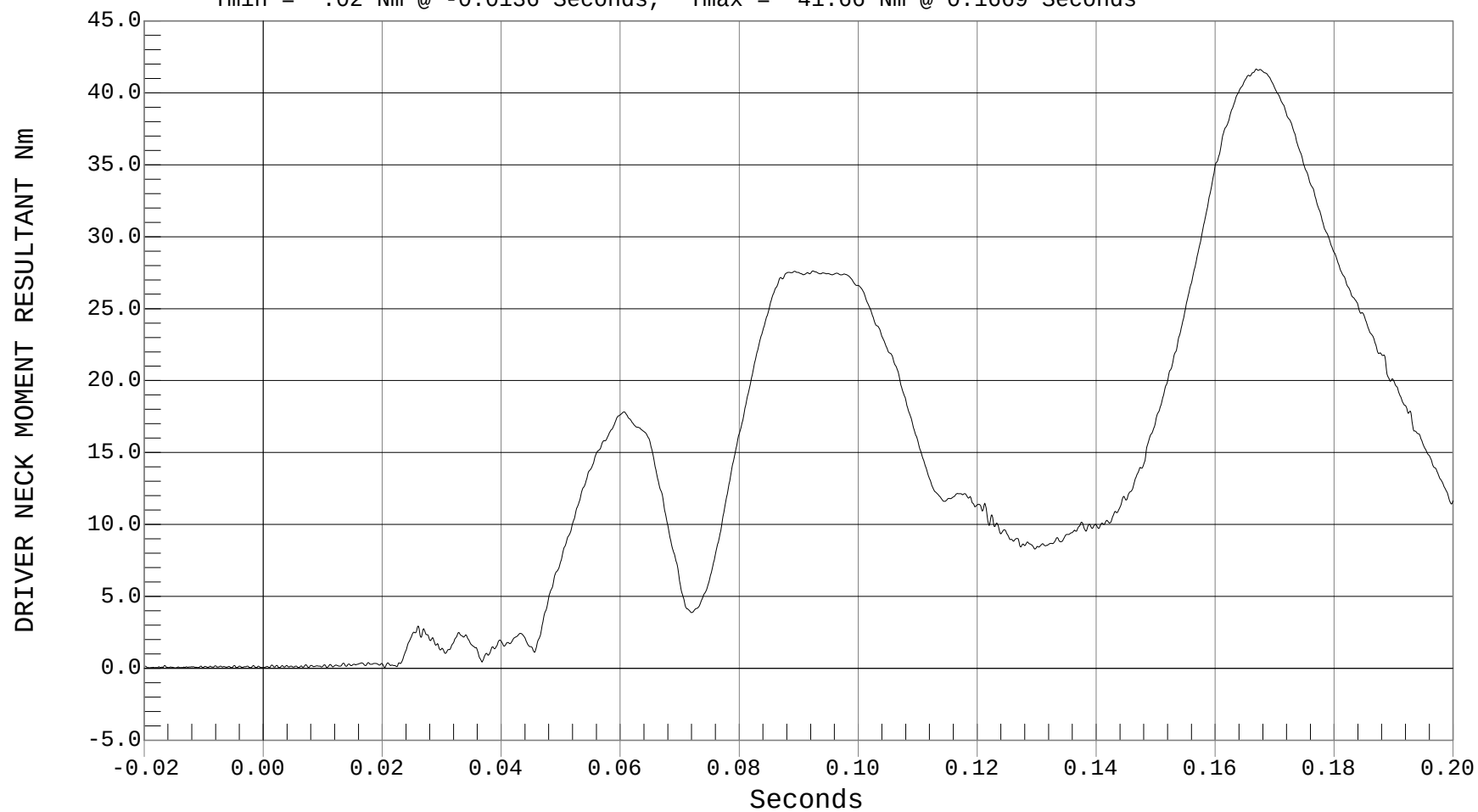
DRIVER NECK MOMENT RESULTANT

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 600

— 1 DRIVER NECK MOMENT RESULTANT, b00095MV.M07

Ymin = .02 Nm @ -0.0136 Seconds, Ymax = 41.66 Nm @ 0.1669 Seconds





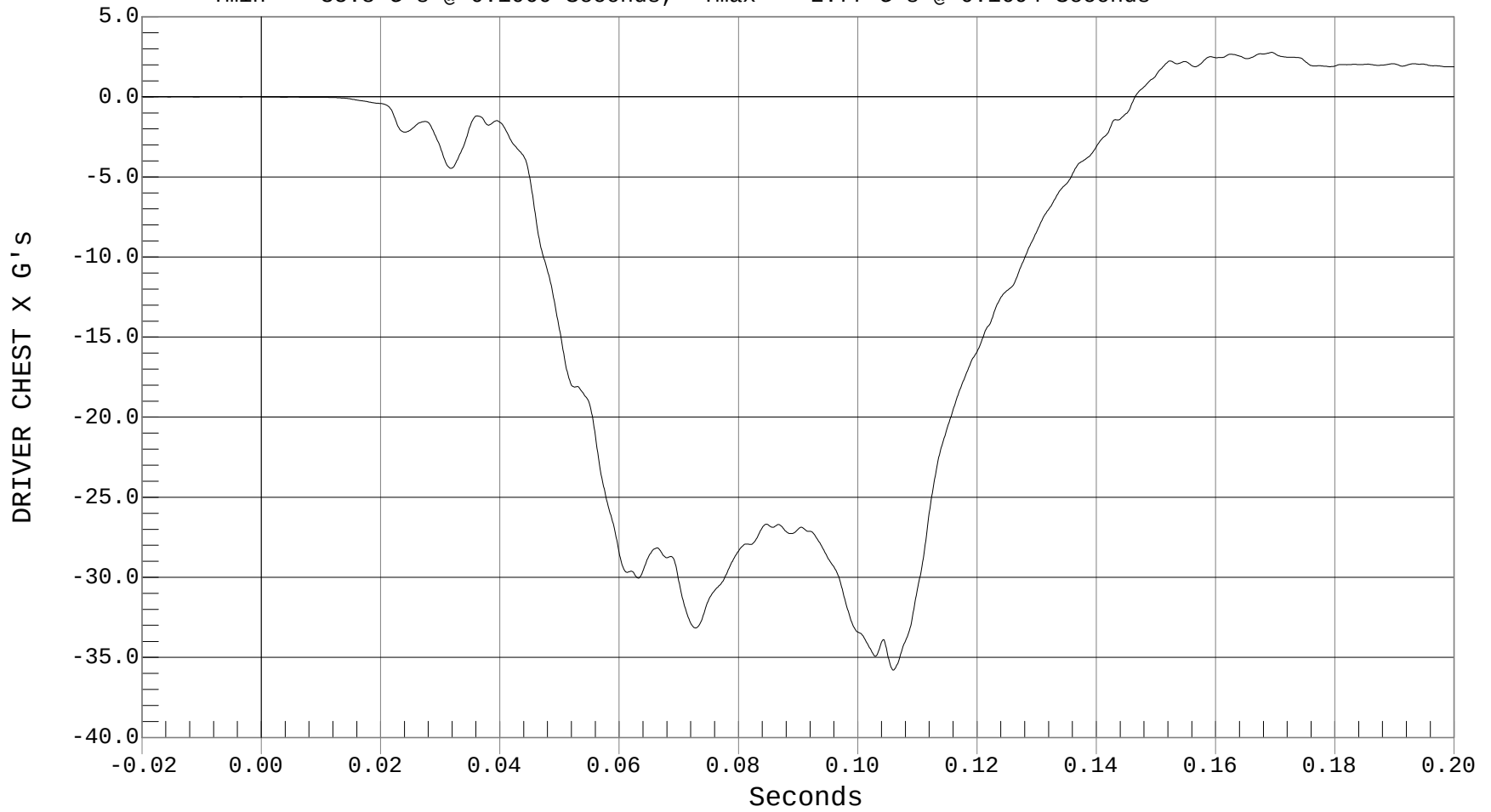
DRIVER CHEST X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 DRIVER CHEST X, b00095AF.A10

Ymin = -35.8 G's @ 0.1060 Seconds, Ymax = 2.77 G's @ 0.1694 Seconds





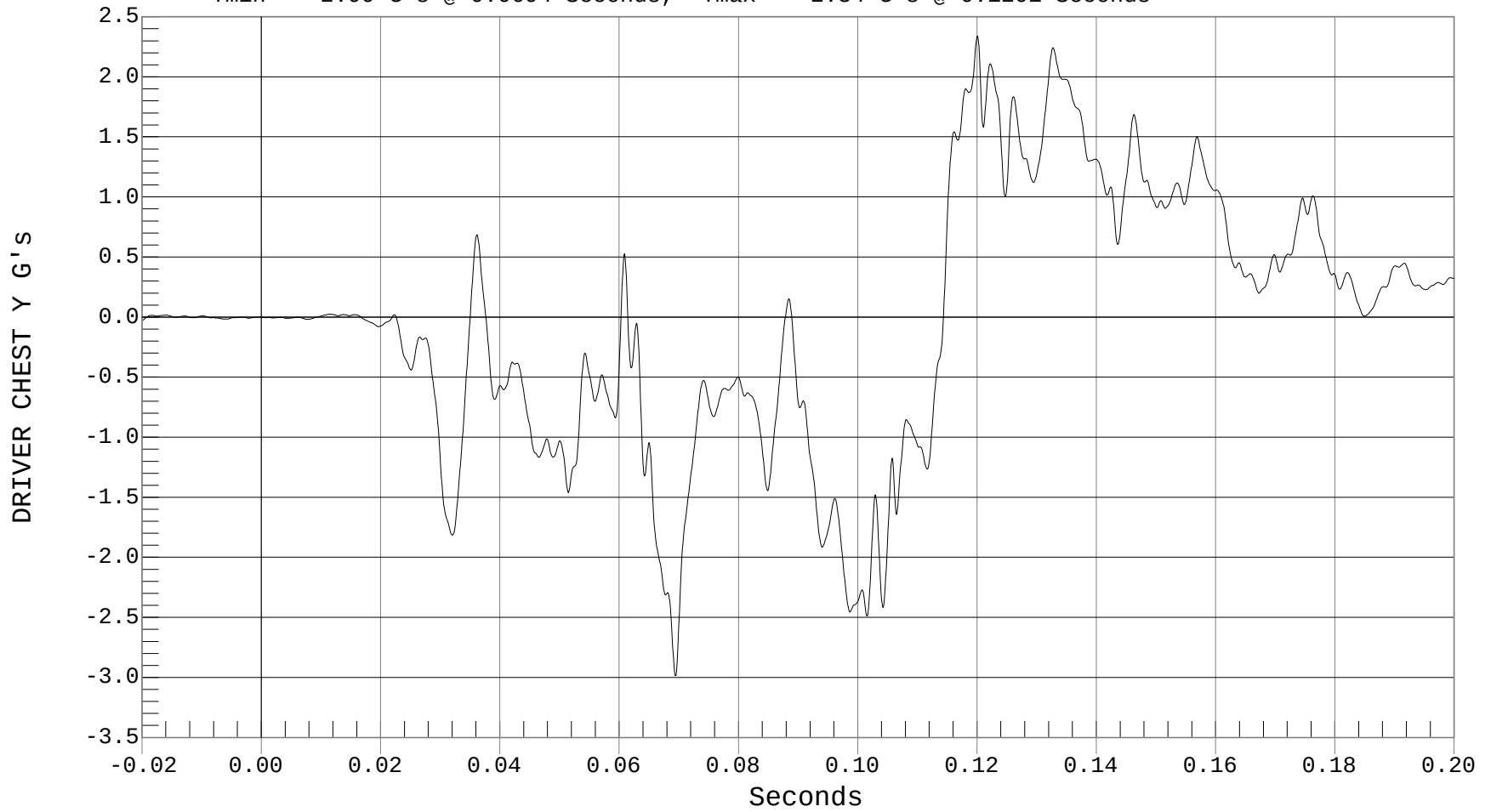
DRIVER CHEST Y ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 DRIVER CHEST Y, b00095AF.A11

Ymin = -2.99 G's @ 0.0694 Seconds, Ymax = 2.34 G's @ 0.1201 Seconds





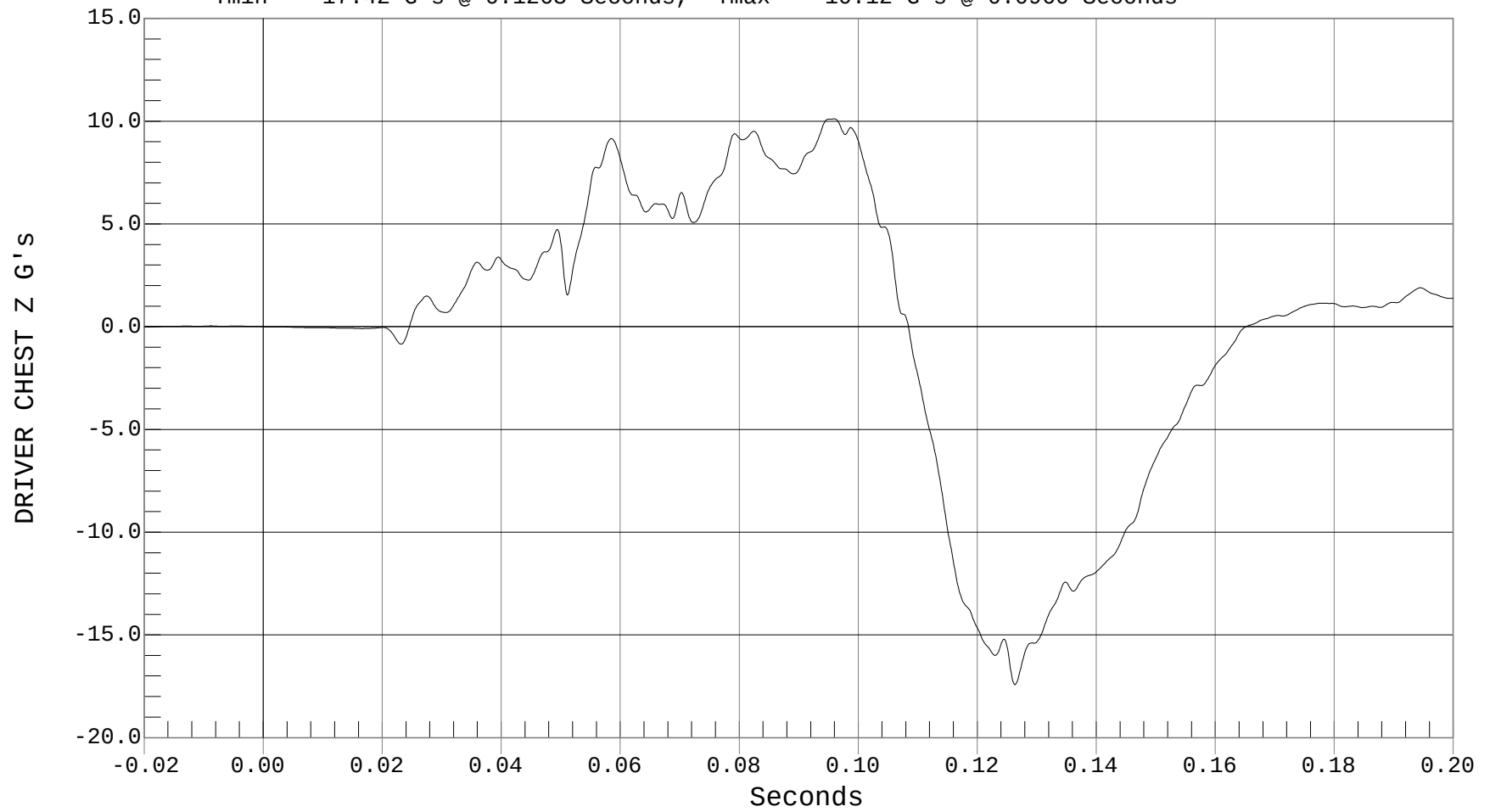
DRIVER CHEST Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 DRIVER CHEST Z, b00095AF.A12

Ymin = -17.42 G's @ 0.1263 Seconds, Ymax = 10.12 G's @ 0.0960 Seconds





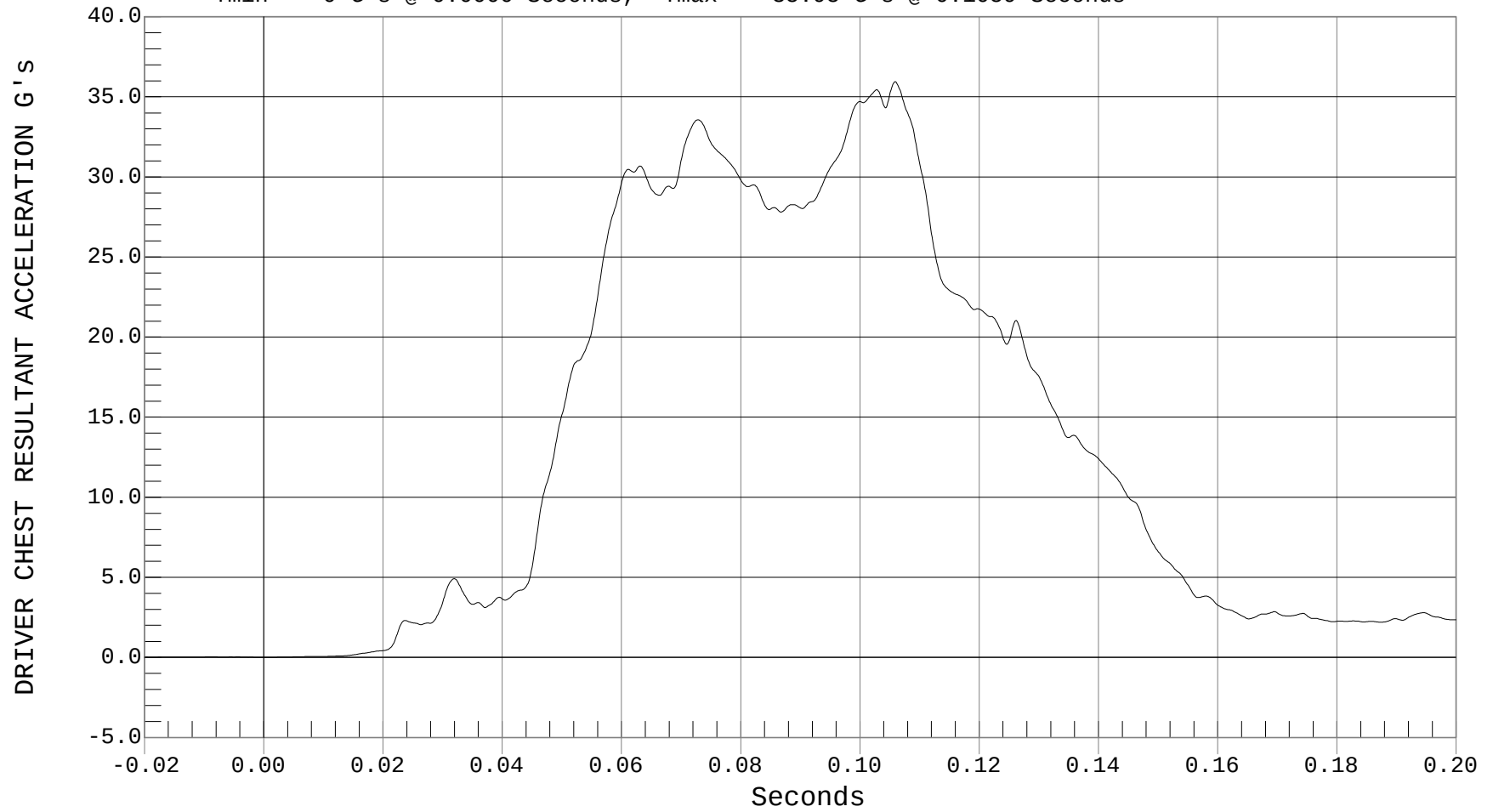
DRIVER CHEST RESULTANT ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 DRIVER CHEST RESULTANT ACCELERATION, b00095AV.A10

Ymin = 0 G's @ 0.0000 Seconds, Ymax = 35.95 G's @ 0.1059 Seconds





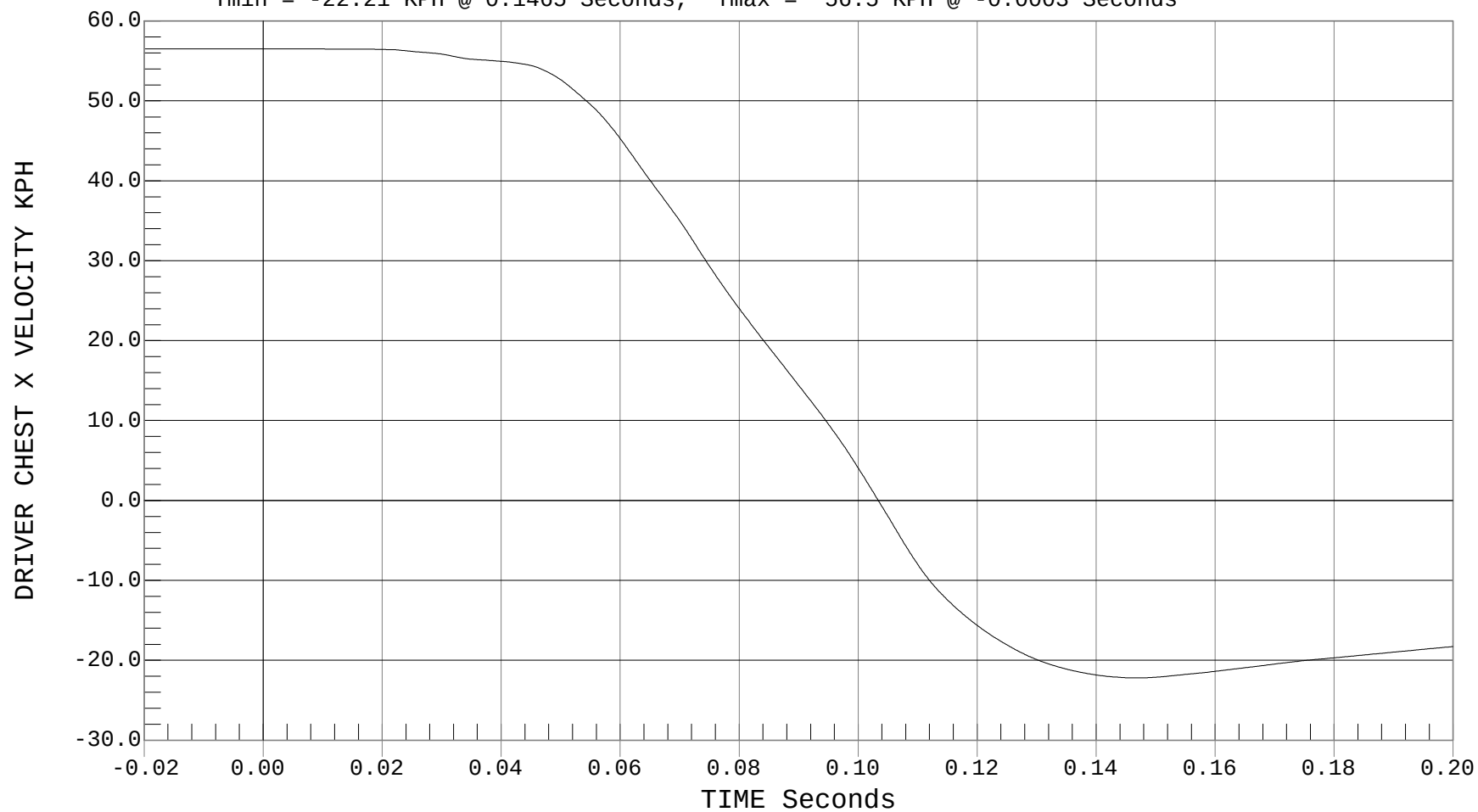
DRIVER CHEST X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 DRIVER CHEST X VELOCITY, b00095AI.V10

Ymin = -22.21 KPH @ 0.1465 Seconds, Ymax = 56.5 KPH @ -0.0003 Seconds





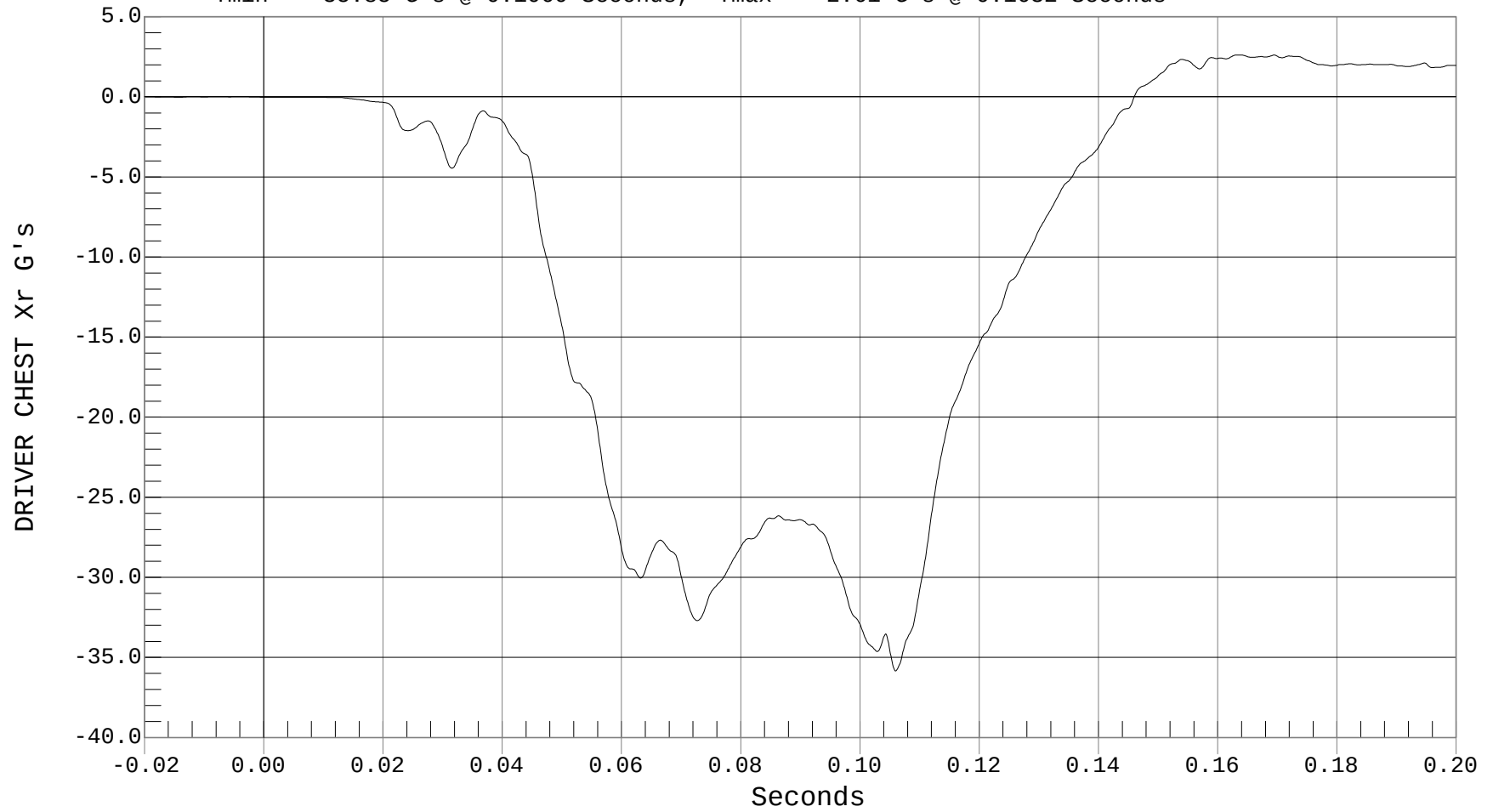
DRIVER CHEST REDUNDANT X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 DRIVER CHEST Xr, b00095AF.A36

Ymin = -35.85 G's @ 0.1060 Seconds, Ymax = 2.61 G's @ 0.1632 Seconds





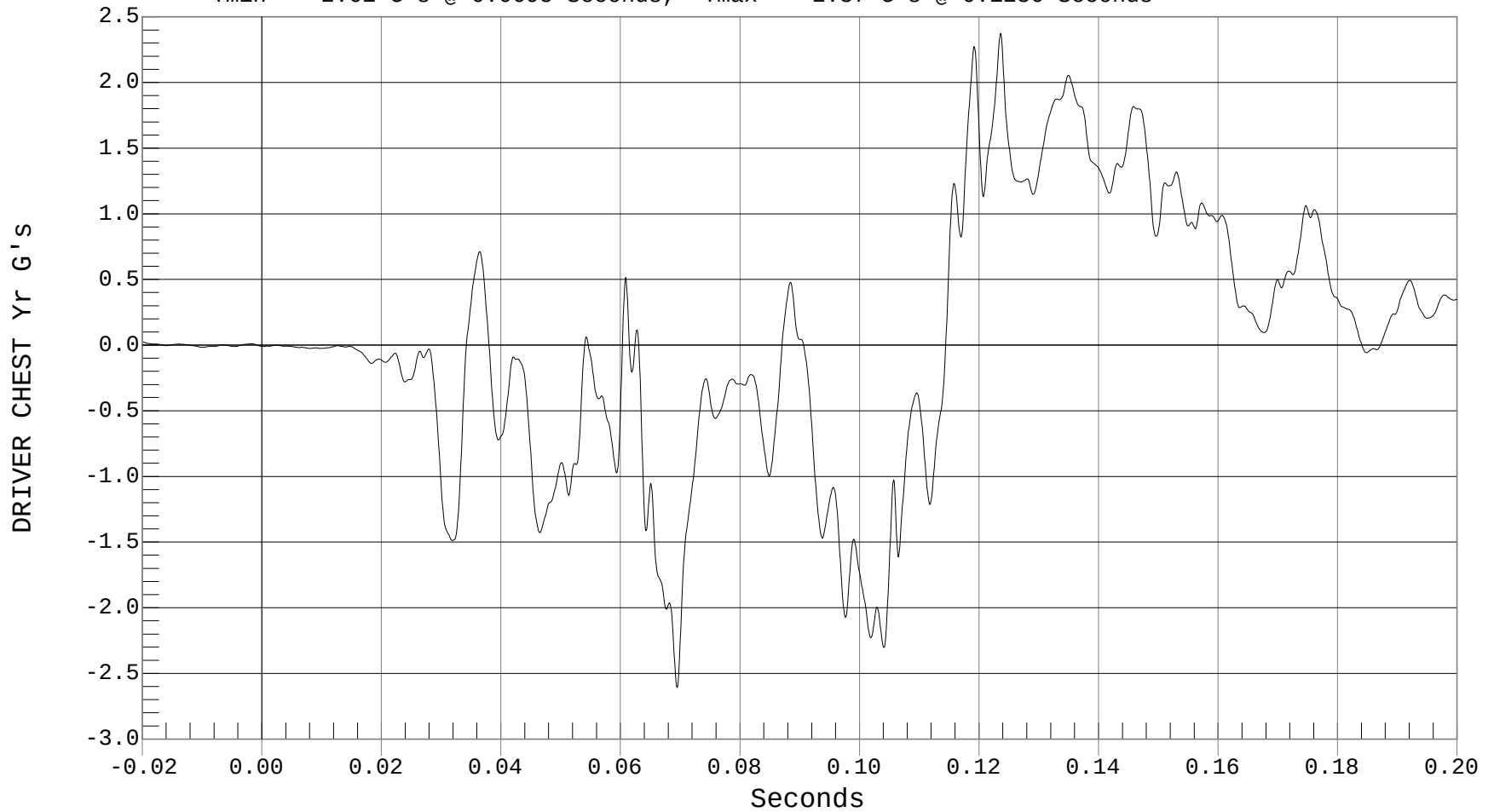
DRIVER CHEST REDUNDANT Y ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 DRIVER CHEST Yr, b00095AF.A37

Ymin = -2.61 G's @ 0.0695 Seconds, Ymax = 2.37 G's @ 0.1236 Seconds





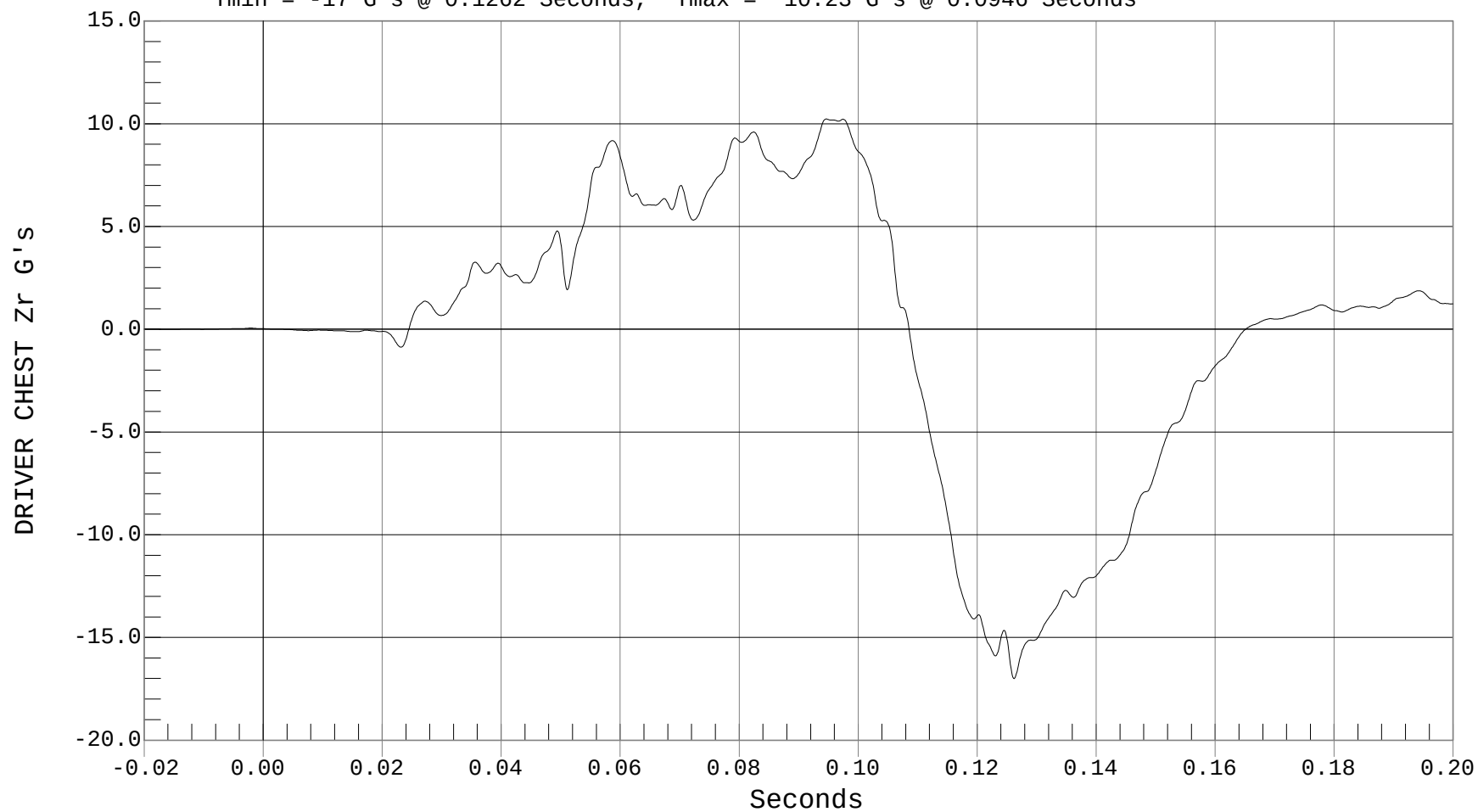
DRIVER CHEST REDUNDANT Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 DRIVER CHEST Zr, b00095AF.A38

Ymin = -17 G's @ 0.1262 Seconds, Ymax = 10.23 G's @ 0.0946 Seconds





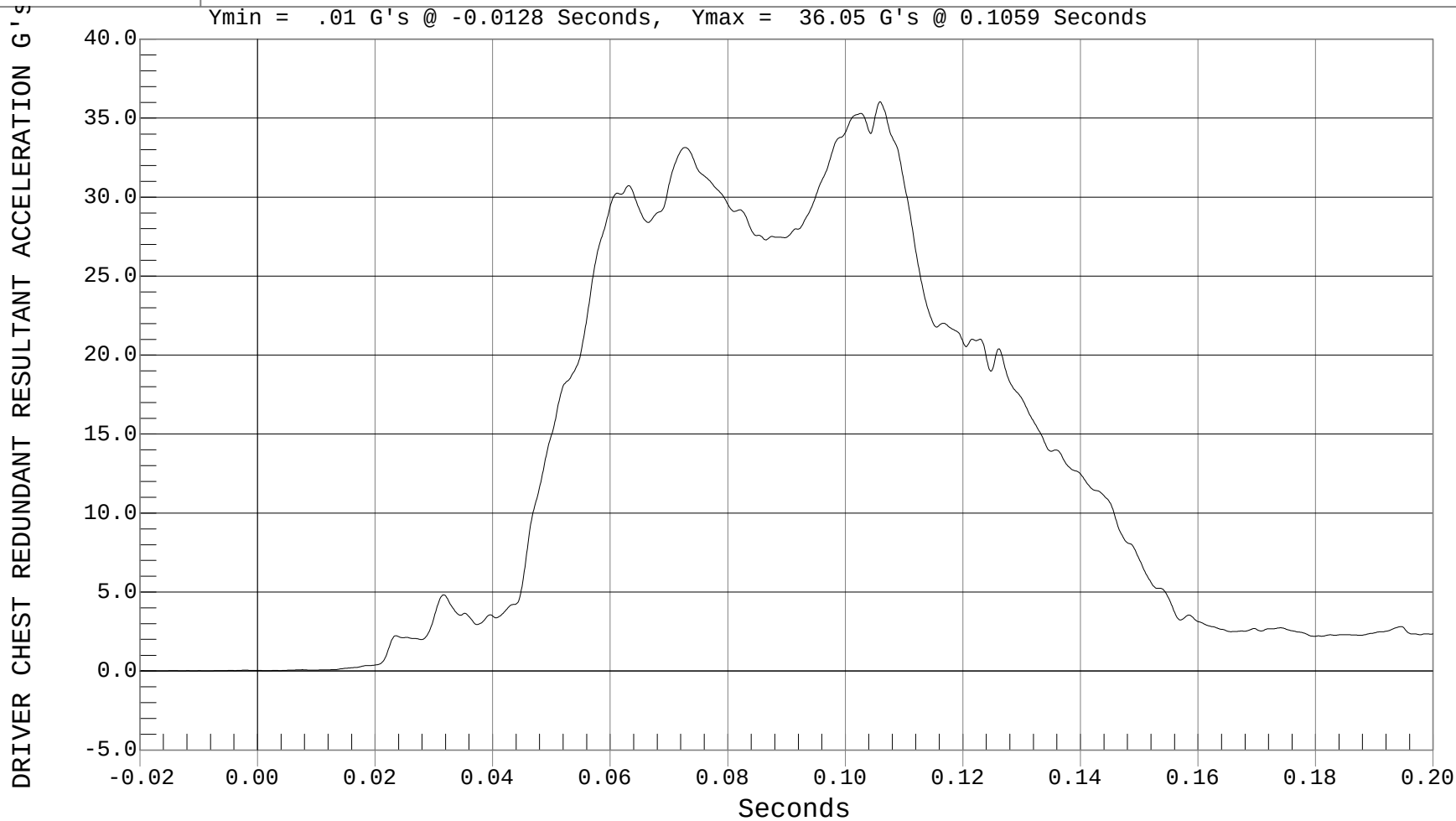
DRIVER CHEST REDUNDANT RESULTANT ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 DRIVER CHEST REDUNDANT RESULTANT ACCELERATION, b00095AV.A36

Ymin = .01 G's @ -0.0128 Seconds, Ymax = 36.05 G's @ 0.1059 Seconds





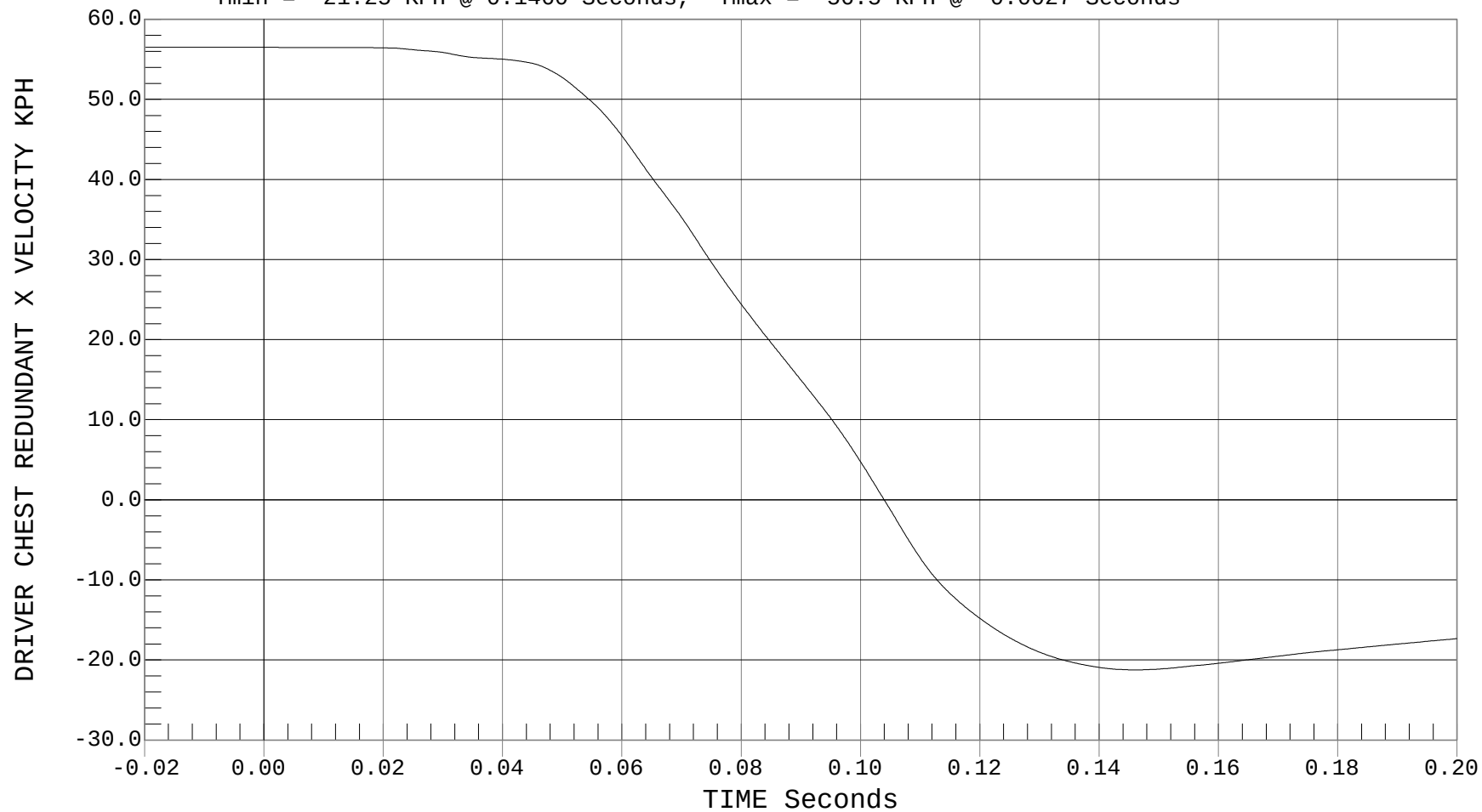
DRIVER CHEST REDUNDANT X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 DRIVER CHEST REDUNDANT X VELOCITY, b00095AI.V36

Ymin = -21.25 KPH @ 0.1460 Seconds, Ymax = 56.5 KPH @ -0.0027 Seconds





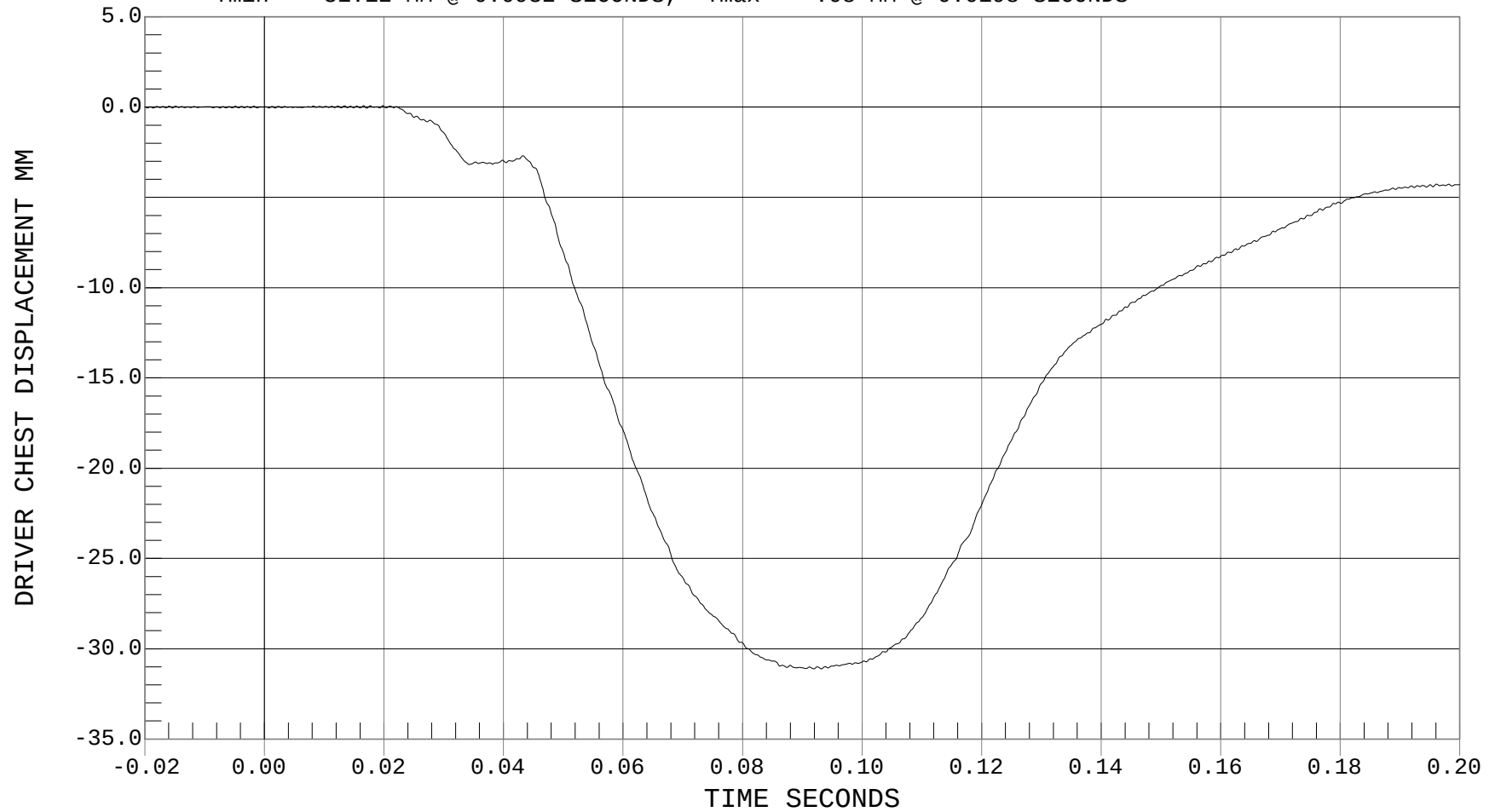
DRIVER CHEST COMPRESSION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 600

— 1 DRIVER CHEST DISPLACEMENT, b00095DF.D13

Ymin = -31.12 MM @ 0.0932 SECONDS, Ymax = .08 MM @ 0.0198 SECONDS





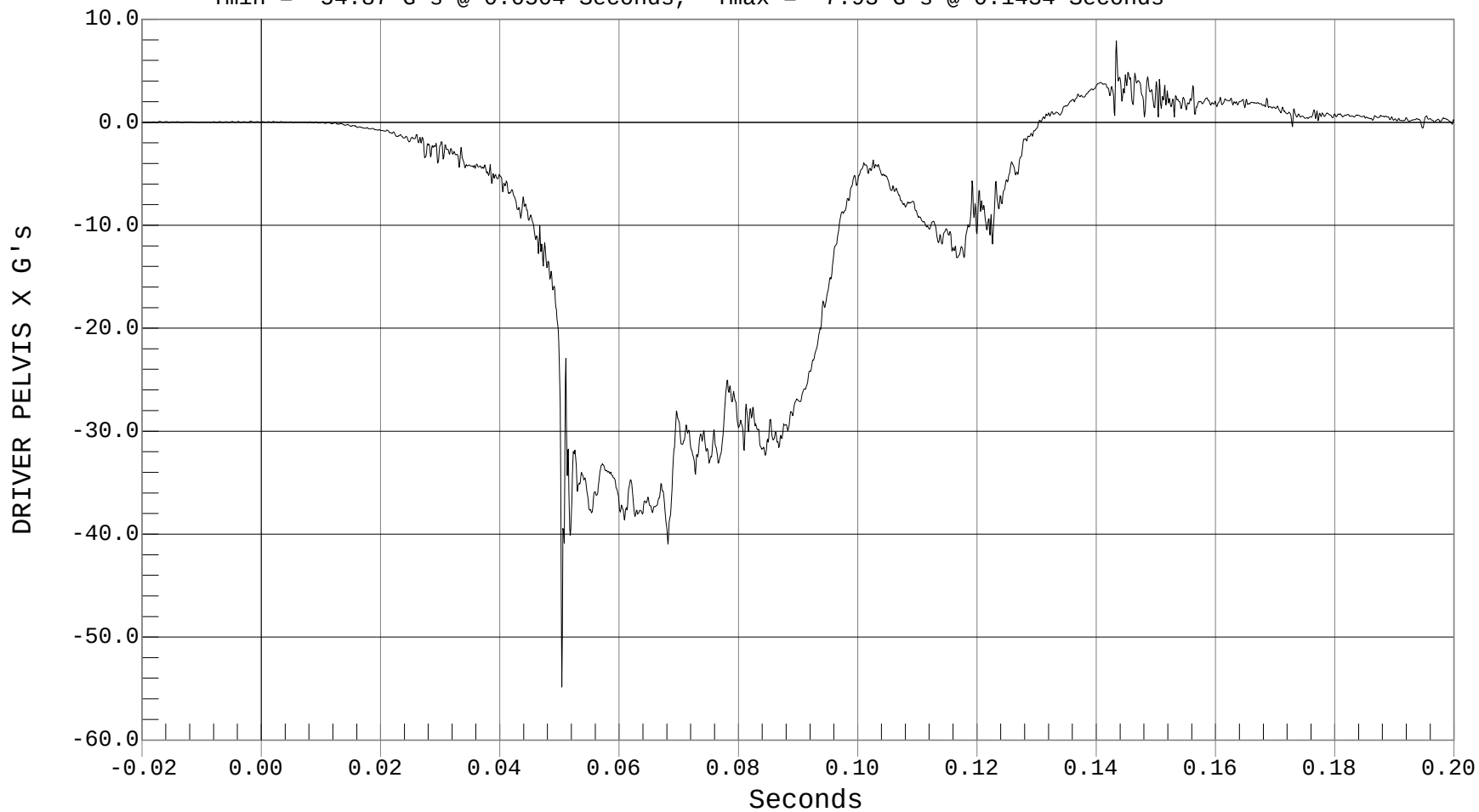
DRIVER PELVIS X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 1000

— 1 DRIVER PELVIS X, b00095AT.A14

Ymin = -54.87 G's @ 0.0504 Seconds, Ymax = 7.93 G's @ 0.1434 Seconds





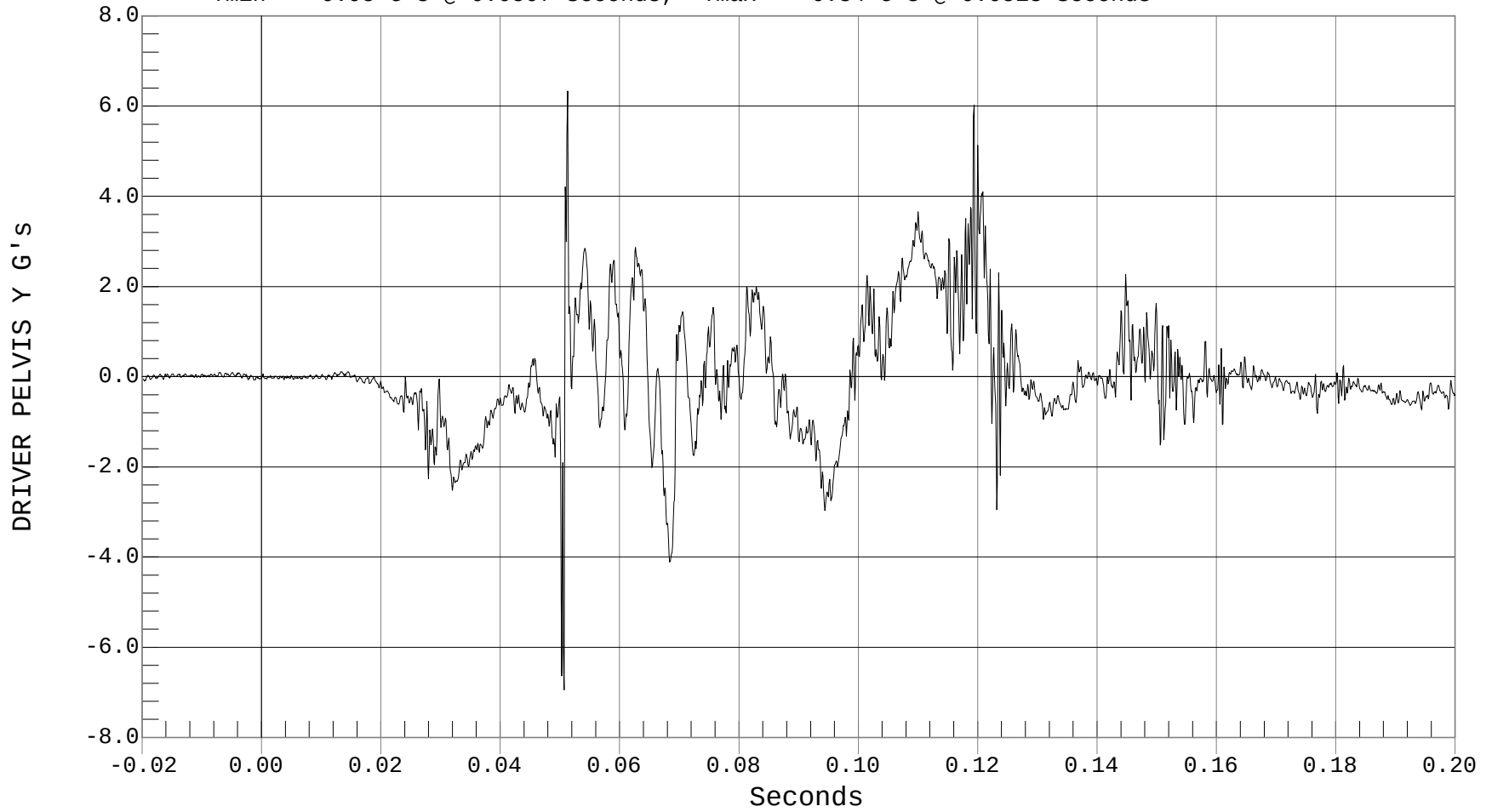
DRIVER PELVIS Y ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 1000

— 1 DRIVER PELVIS Y, b00095AT.A15

Ymin = -6.95 G's @ 0.0507 Seconds, Ymax = 6.34 G's @ 0.0513 Seconds





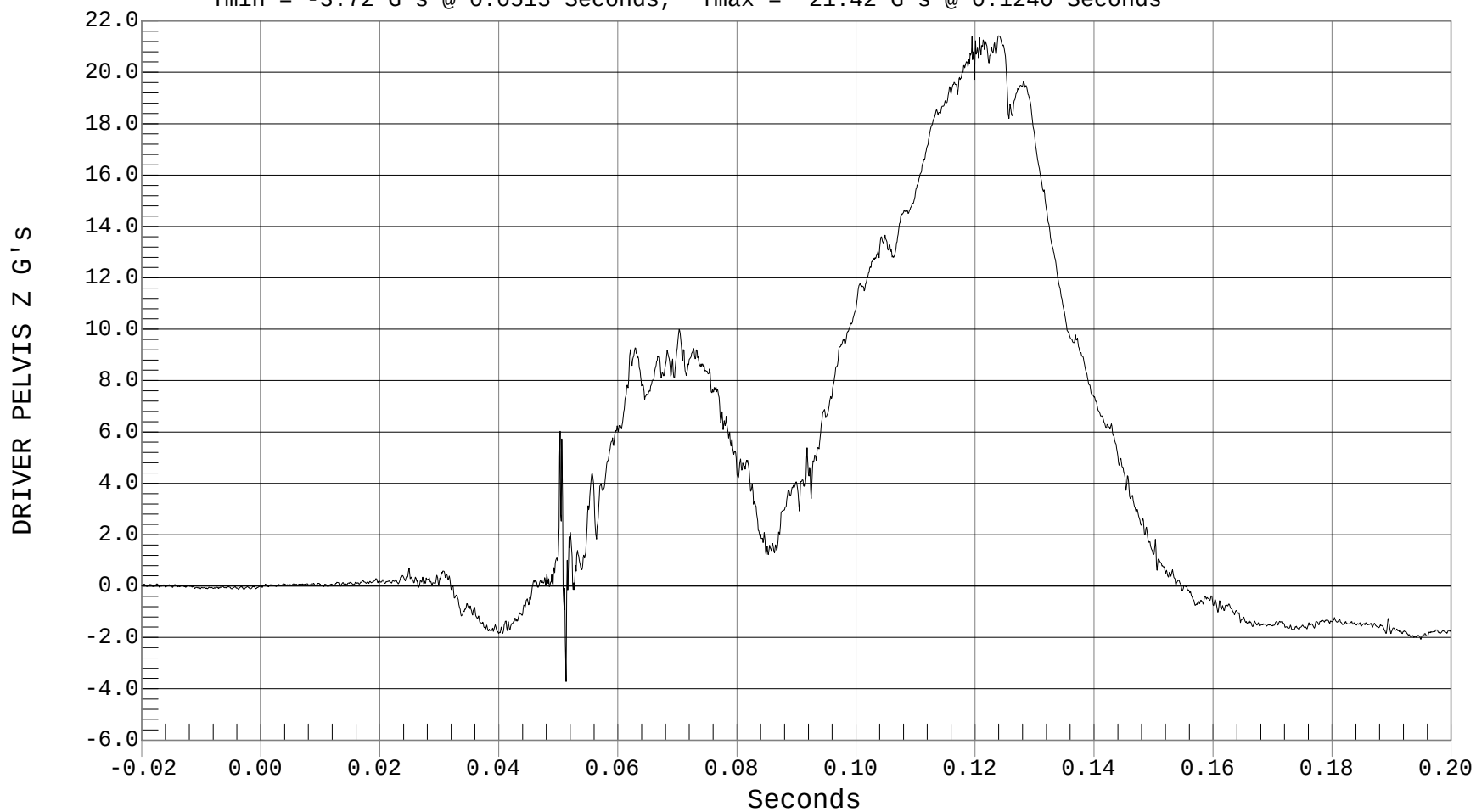
DRIVER PELVIS Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 1000

— 1 DRIVER PELVIS Z, b00095AT.A16

Ymin = -3.72 G's @ 0.0513 Seconds, Ymax = 21.42 G's @ 0.1240 Seconds





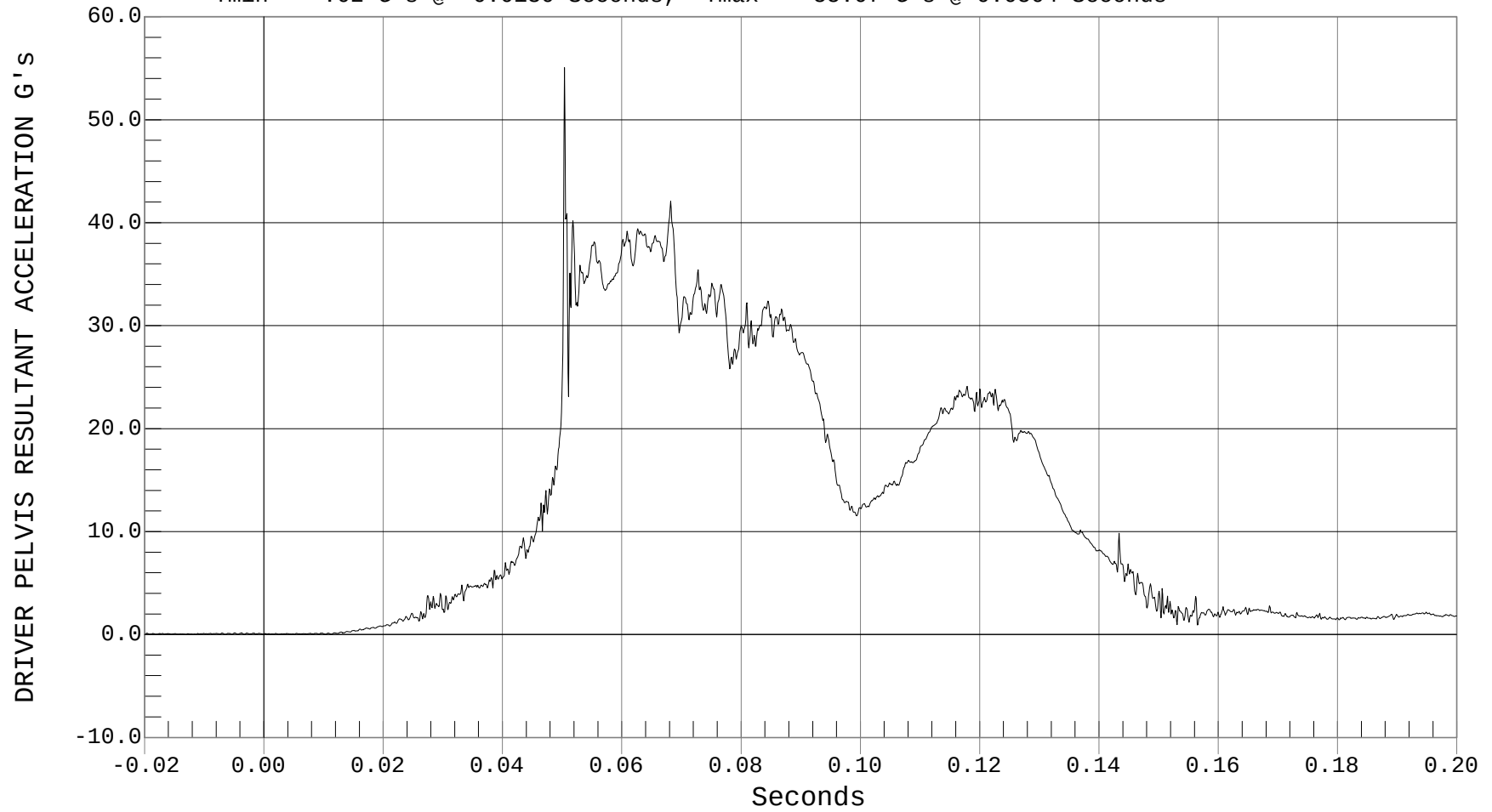
DRIVER PELVIS RESULTANT ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 1000

— 1 DRIVER PELVIS RESULTANT ACCELERATION, b00095AV.A14

Ymin = .02 G's @ -0.0130 Seconds, Ymax = 55.07 G's @ 0.0504 Seconds





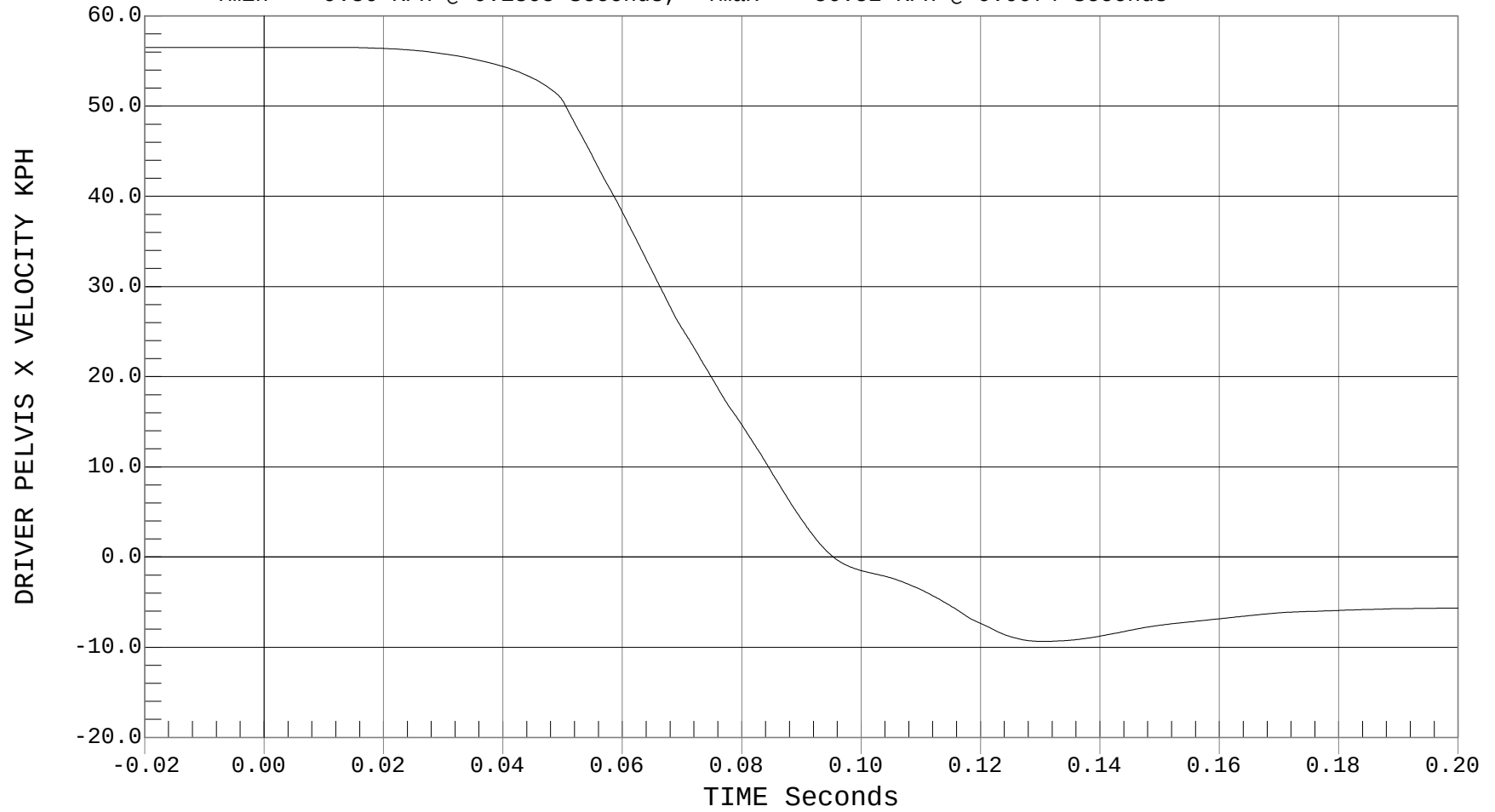
DRIVER PELVIS X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 DRIVER PELVIS X VELOCITY, b00095AI.V14

Ymin = -9.36 KPH @ 0.1305 Seconds, Ymax = 56.52 KPH @ 0.0074 Seconds



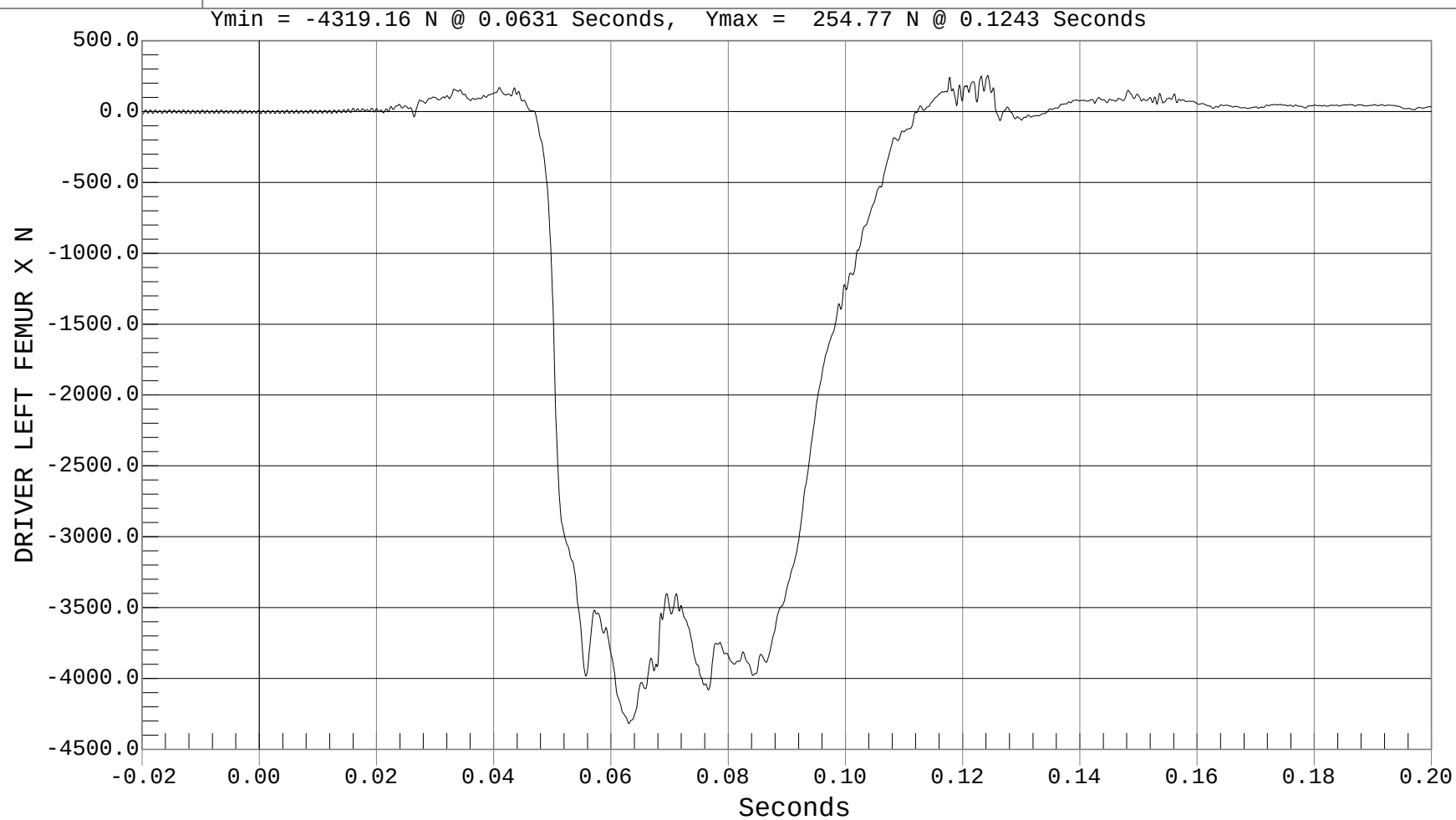


DRIVER LEFT FEMUR FORCE

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 600

— 1 DRIVER LEFT FEMUR X, b00095FF.F18





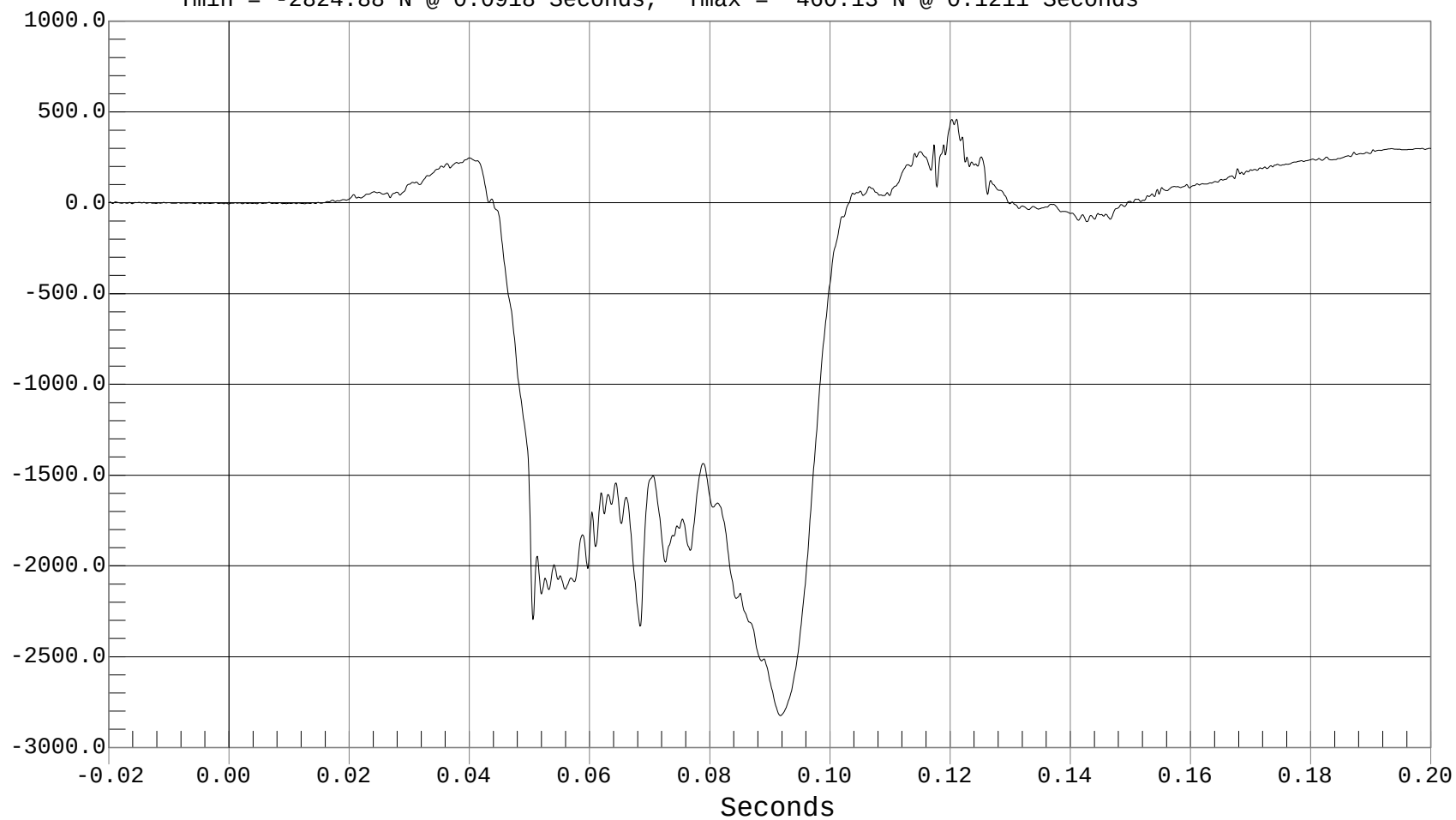
DRIVER RIGHT FEMUR FORCE

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 600

— 1 DRIVER RIGHT FEMUR X, b00095FF.F17

Ymin = -2824.88 N @ 0.0918 Seconds, Ymax = 460.13 N @ 0.1211 Seconds





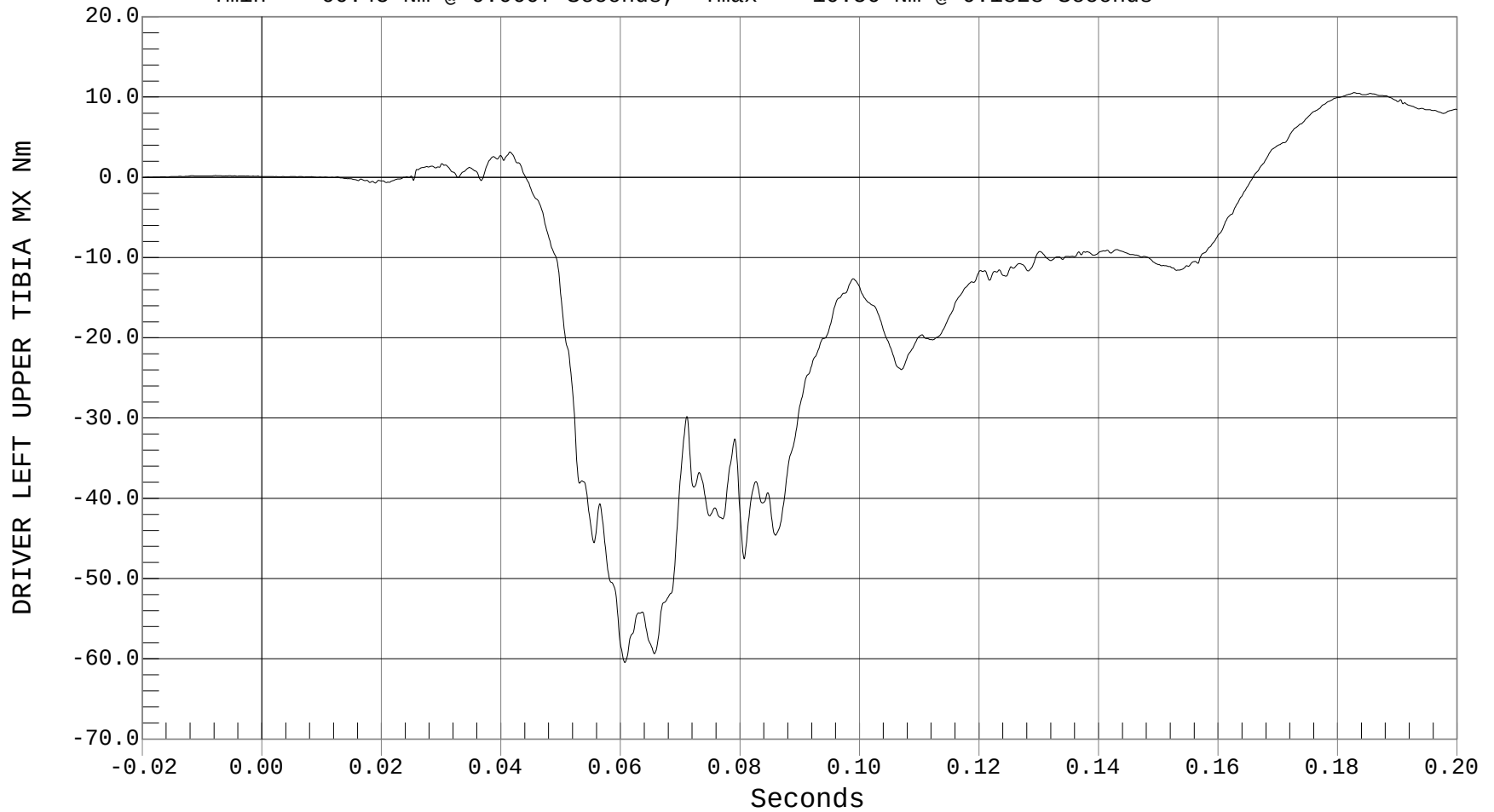
DRIVER LEFT UPPER TIBIA MOMENT X

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 600

— 1 DRIVER LEFT UPPER TIBIA MX, b00095MF.M75

Ymin = -60.45 Nm @ 0.0607 Seconds, Ymax = 10.56 Nm @ 0.1828 Seconds





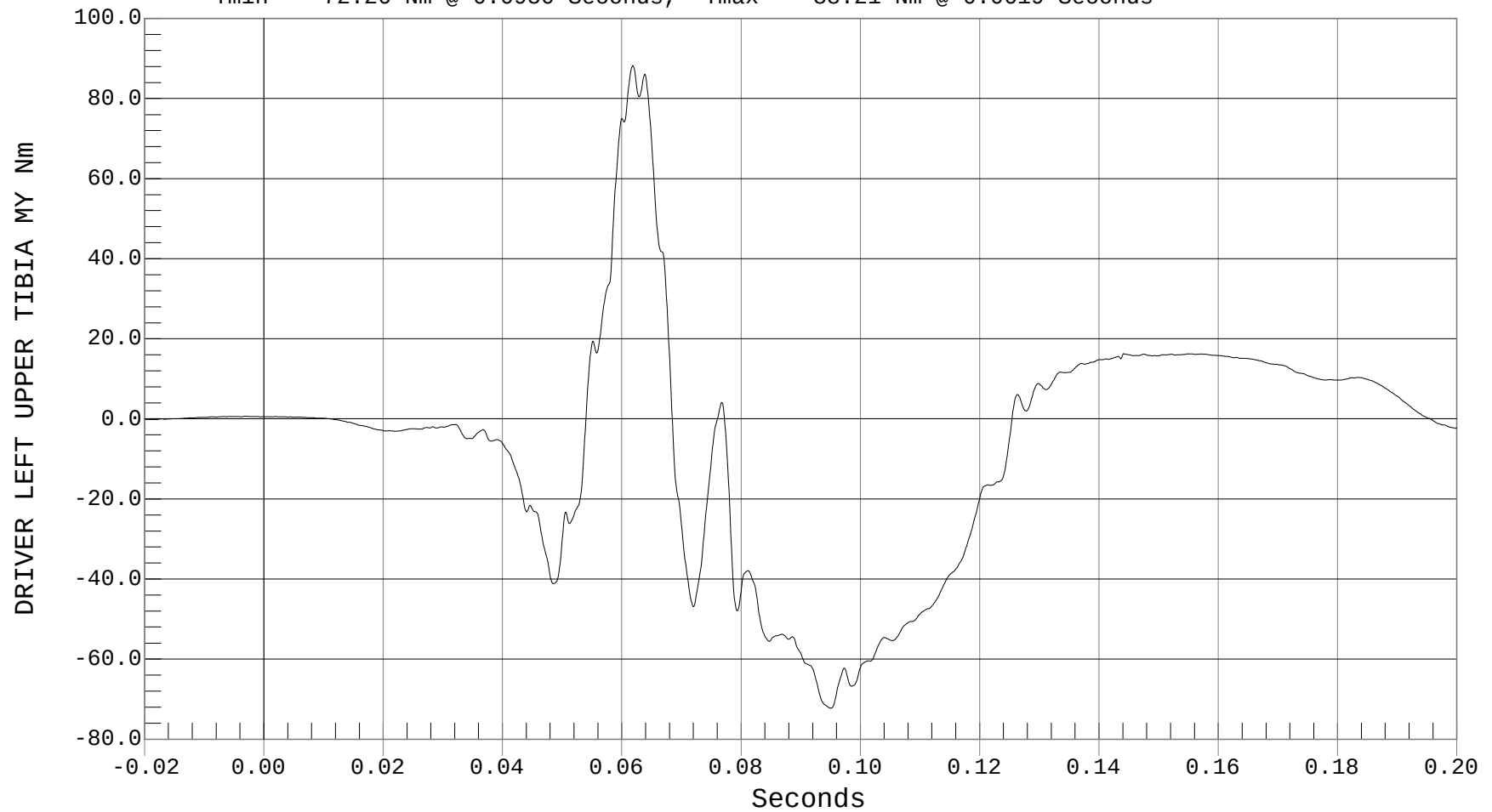
DRIVER LEFT UPPER TIBIA MOMENT Y

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 600

— 1 DRIVER LEFT UPPER TIBIA MY, b00095MF.M76

Ymin = -72.26 Nm @ 0.0950 Seconds, Ymax = 88.21 Nm @ 0.0619 Seconds





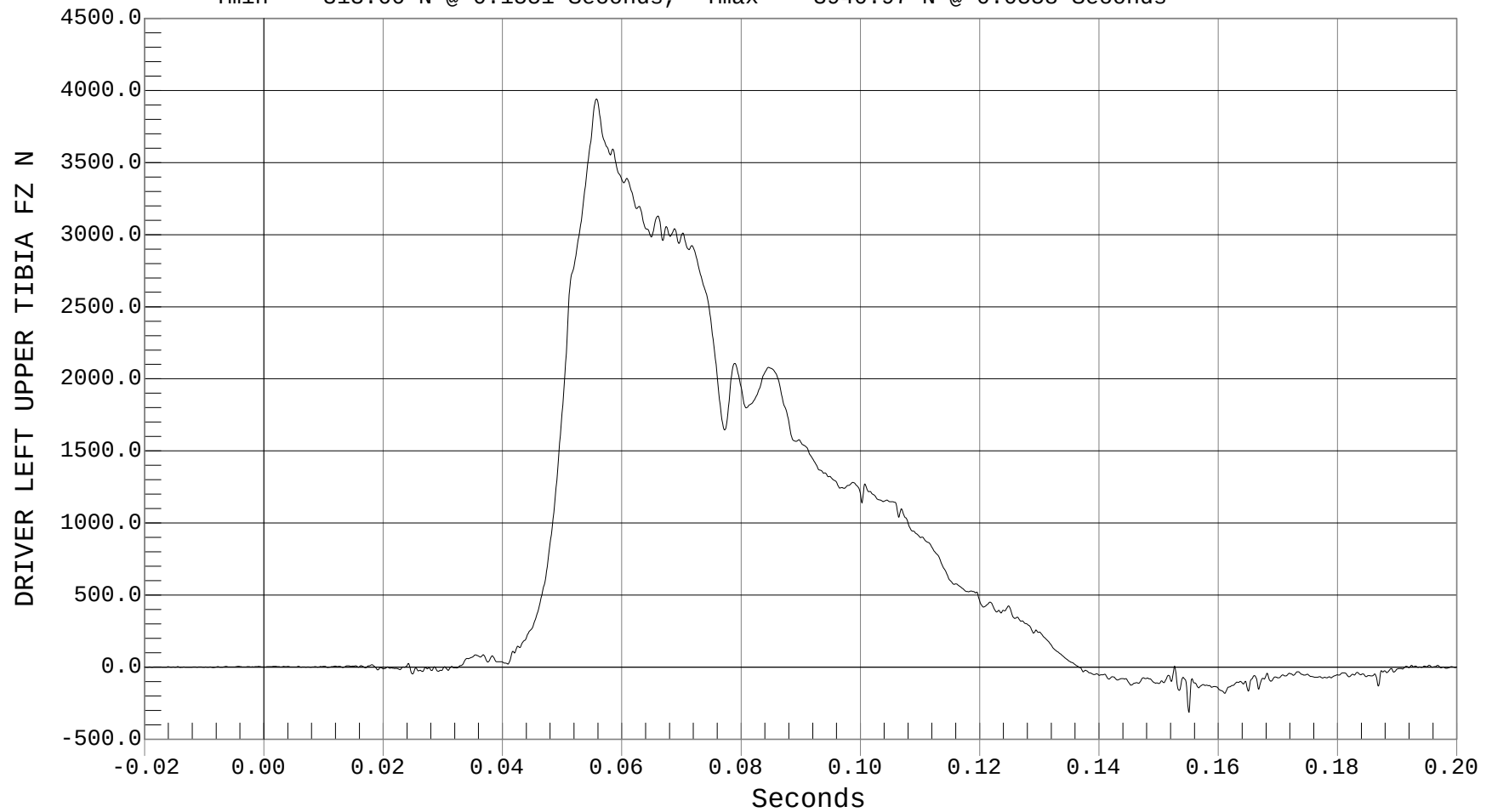
DRIVER LEFT UPPER TIBIA FORCE Z

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 600

— 1 DRIVER LEFT UPPER TIBIA FZ, b00095FF.F77

Ymin = -313.66 N @ 0.1551 Seconds, Ymax = 3940.97 N @ 0.0558 Seconds





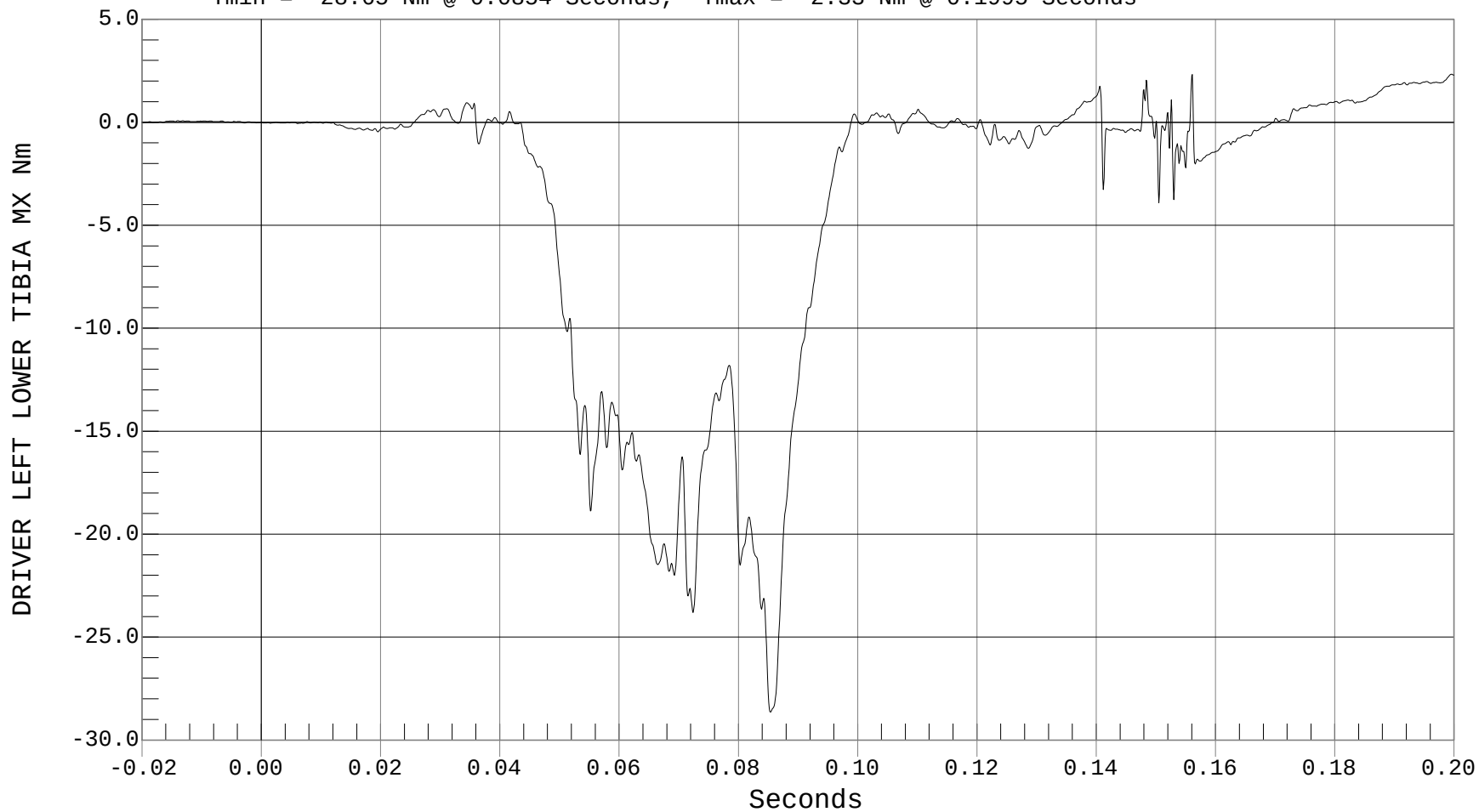
DRIVER LEFT LOWER TIBIA MOMENT X

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 600

— 1 DRIVER LEFT LOWER TIBIA MX, b00095MF.M78

Ymin = -28.65 Nm @ 0.0854 Seconds, Ymax = 2.33 Nm @ 0.1995 Seconds





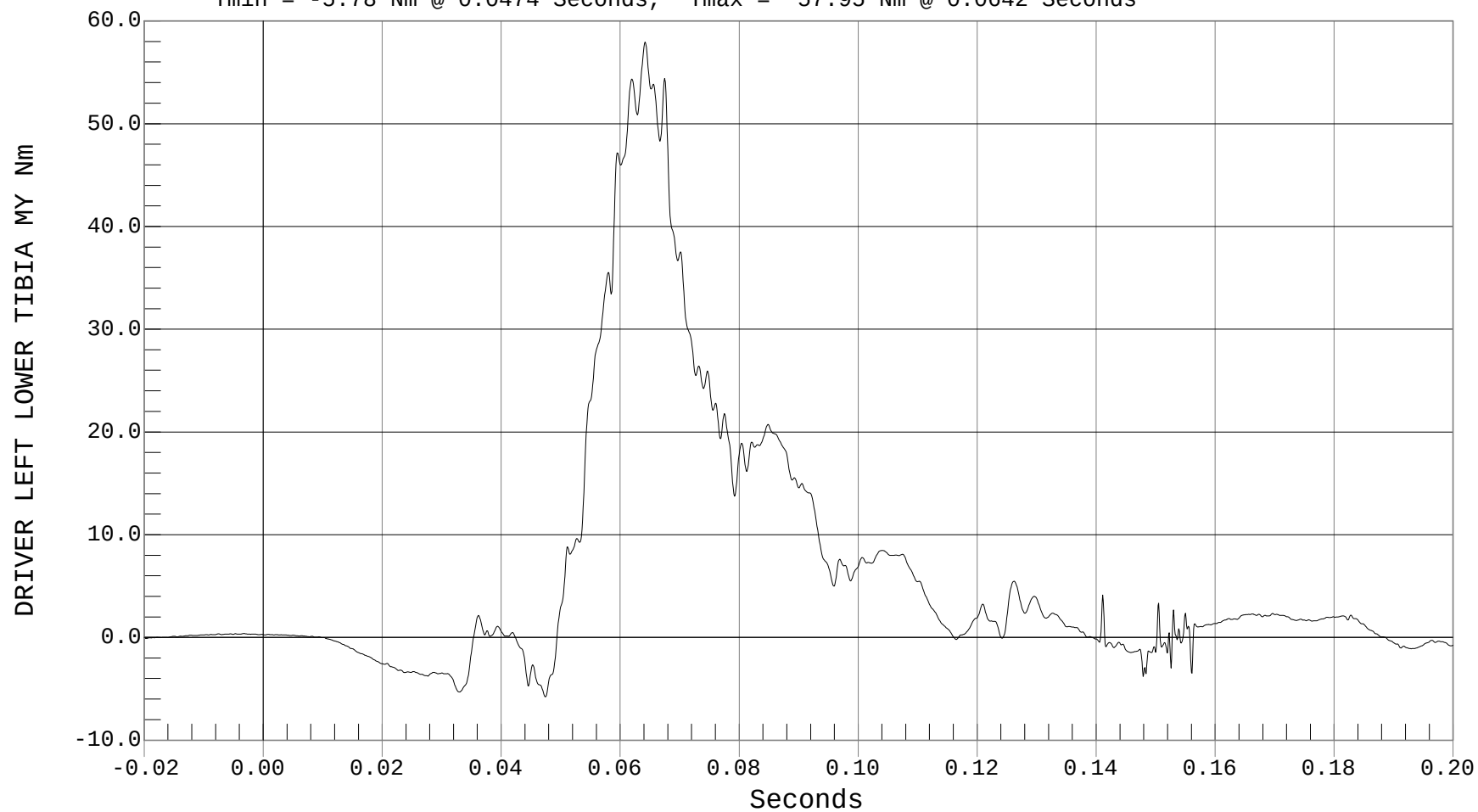
DRIVER LEFT LOWER TIBIA MOMENT Y

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 600

— 1 DRIVER LEFT LOWER TIBIA MY, b00095MF.M79

Ymin = -5.78 Nm @ 0.0474 Seconds, Ymax = 57.95 Nm @ 0.0642 Seconds





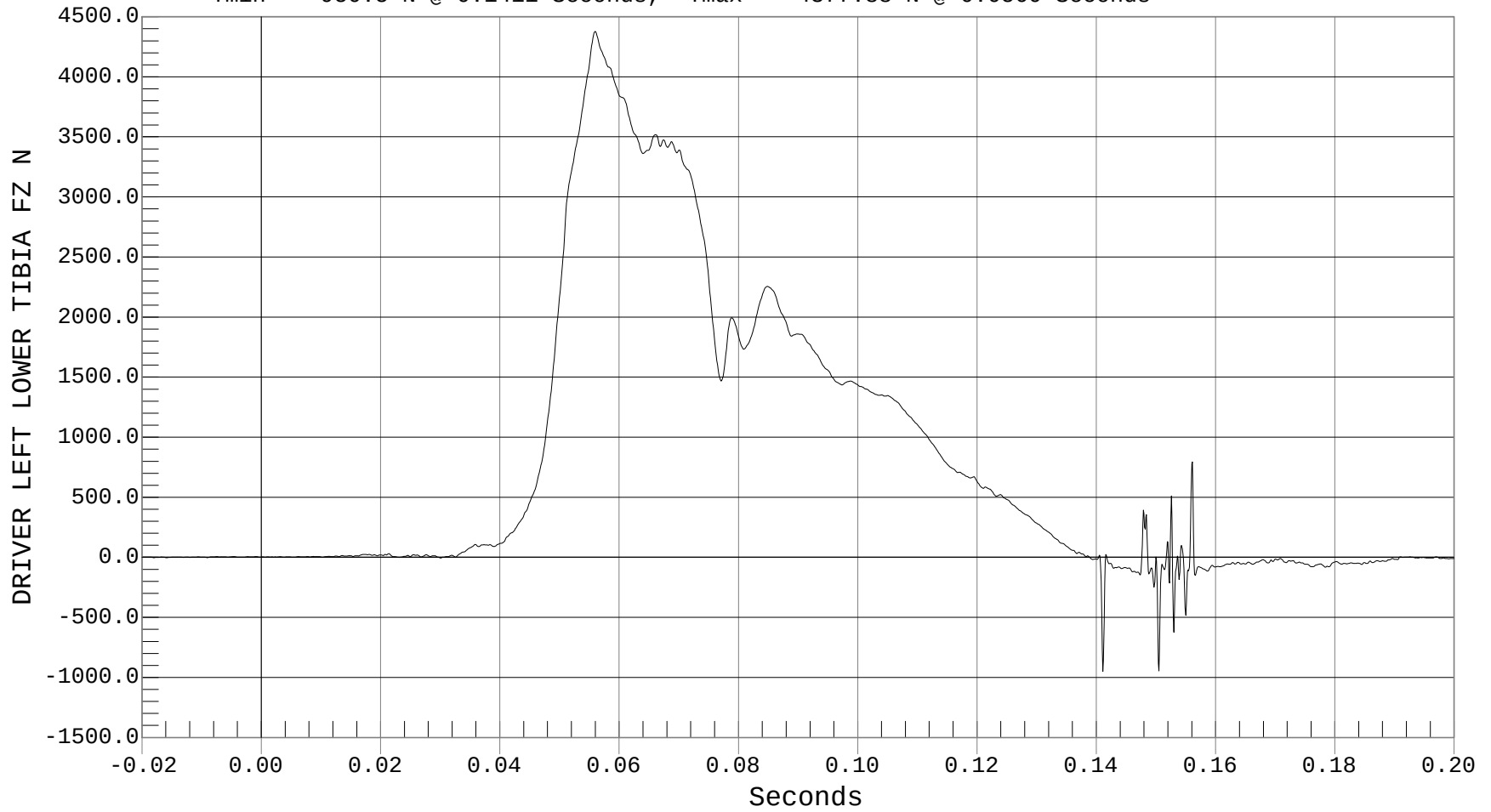
DRIVER LEFT LOWER TIBIA FORCE Z

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 600

— 1 DRIVER LEFT LOWER TIBIA FZ, b00095FF.F80

Ymin = -950.5 N @ 0.1411 Seconds, Ymax = 4377.88 N @ 0.0560 Seconds





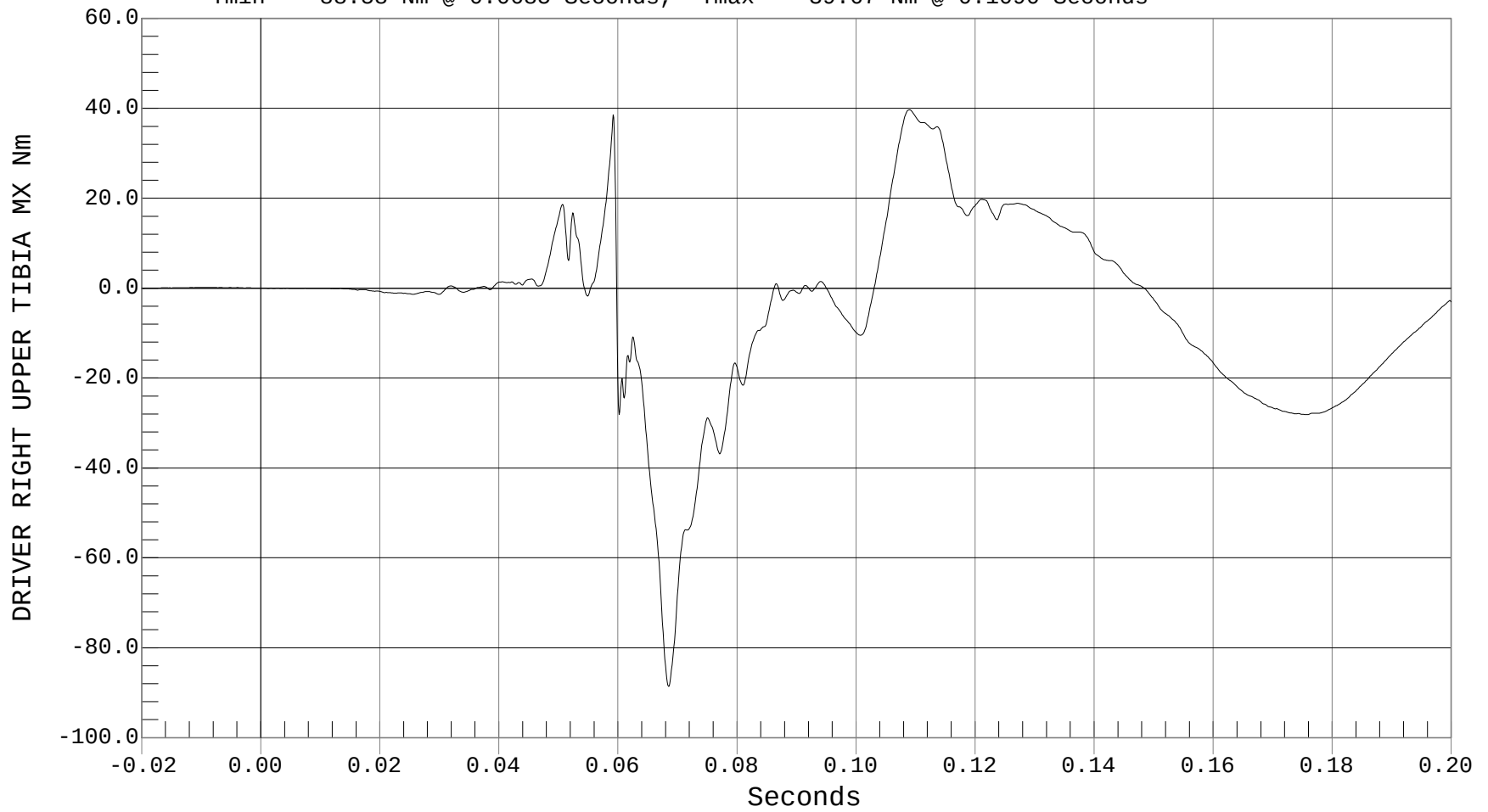
DRIVER RIGHT UPPER TIBIA MOMENT X

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 600

— 1 DRIVER RIGHT UPPER TIBIA MX, b00095MF.M69

Ymin = -88.58 Nm @ 0.0685 Seconds, Ymax = 39.67 Nm @ 0.1090 Seconds





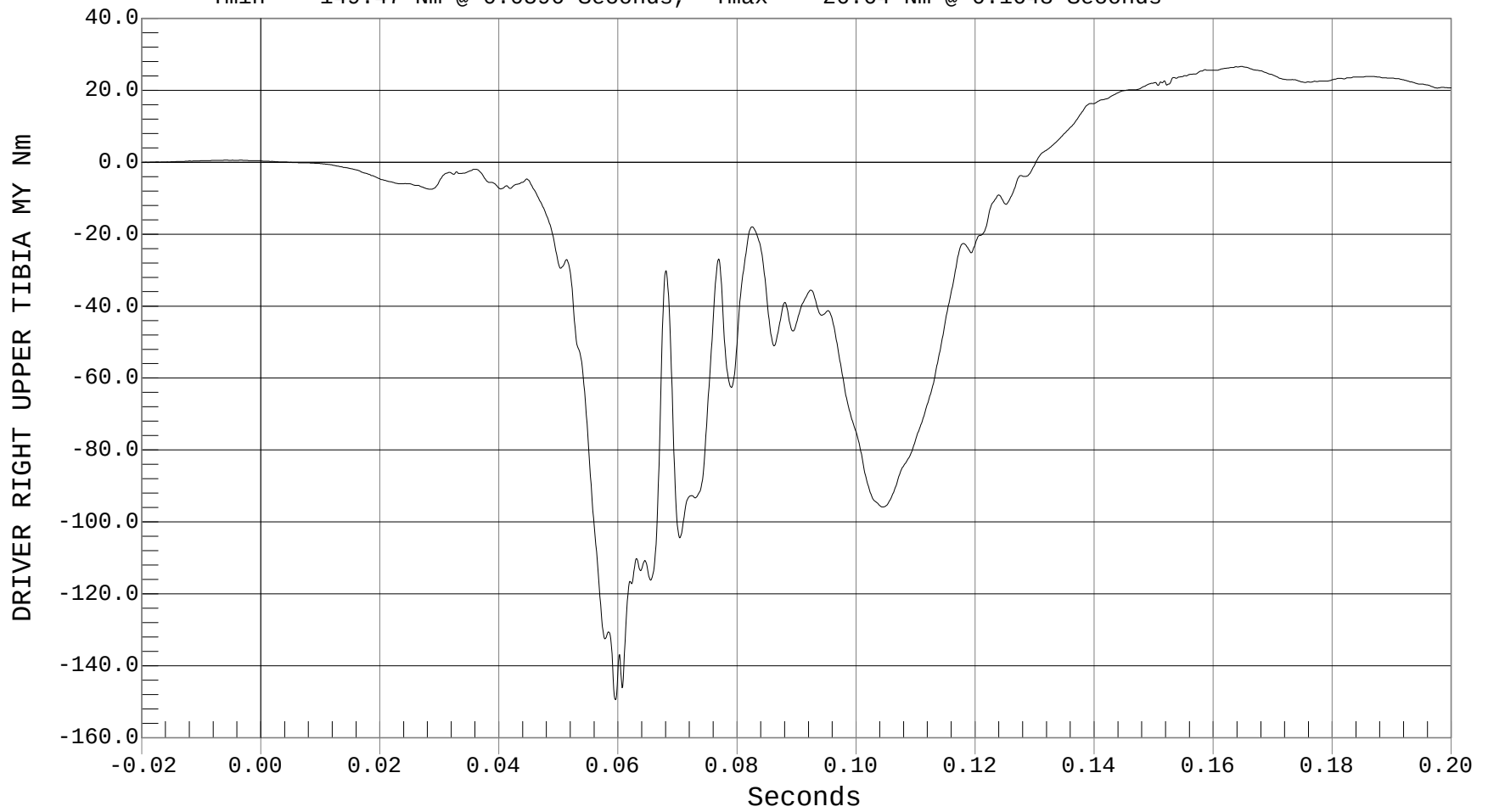
DRIVER RIGHT UPPER TIBIA MOMENT Y

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 600

— 1 DRIVER RIGHT UPPER TIBIA MY, b00095MF.M70

Ymin = -149.47 Nm @ 0.0596 Seconds, Ymax = 26.64 Nm @ 0.1648 Seconds





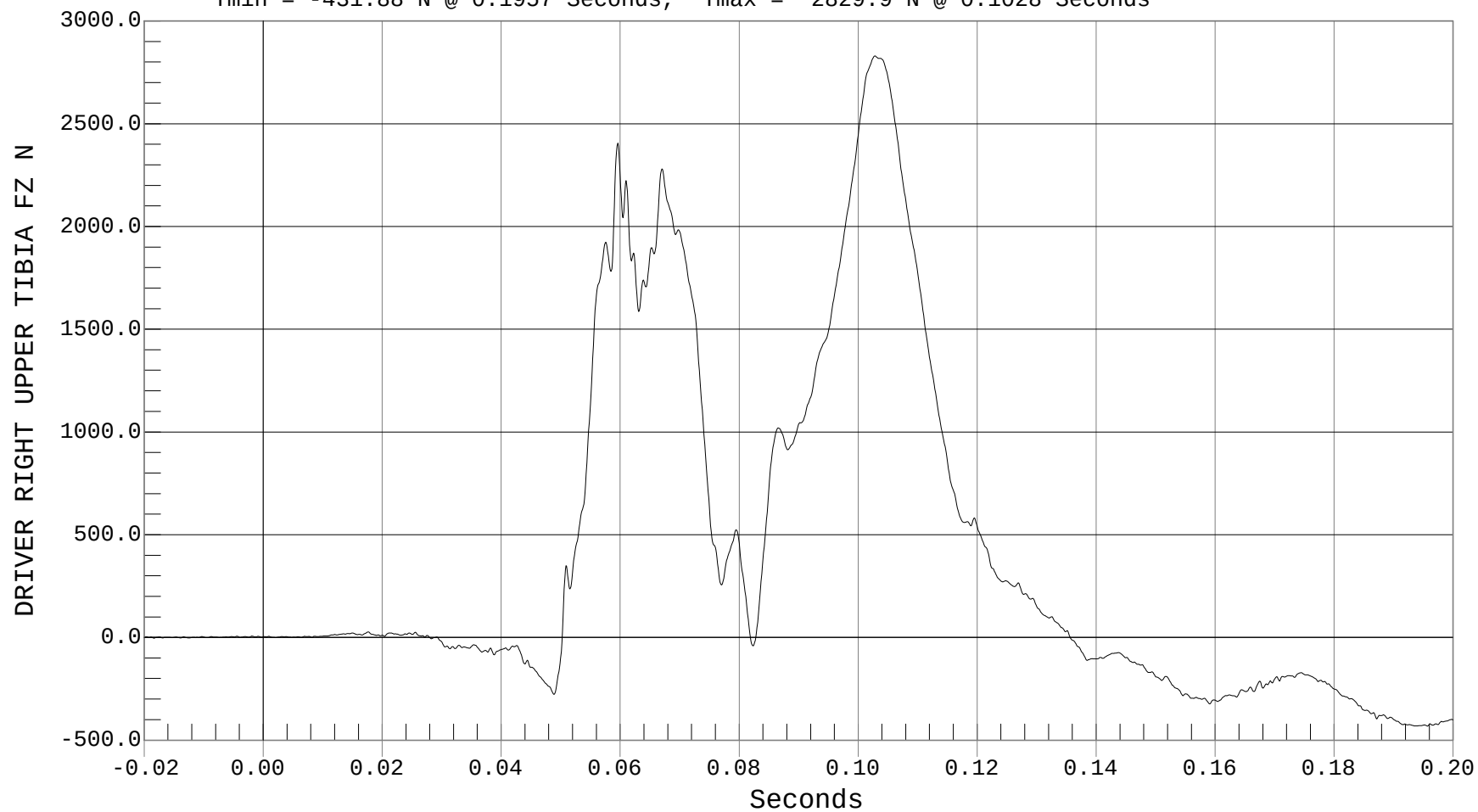
DRIVER RIGHT UPPER TIBIA FORCE Z

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 600

— 1 DRIVER RIGHT UPPER TIBIA FZ, b00095FF.F71

Ymin = -431.88 N @ 0.1957 Seconds, Ymax = 2829.9 N @ 0.1028 Seconds





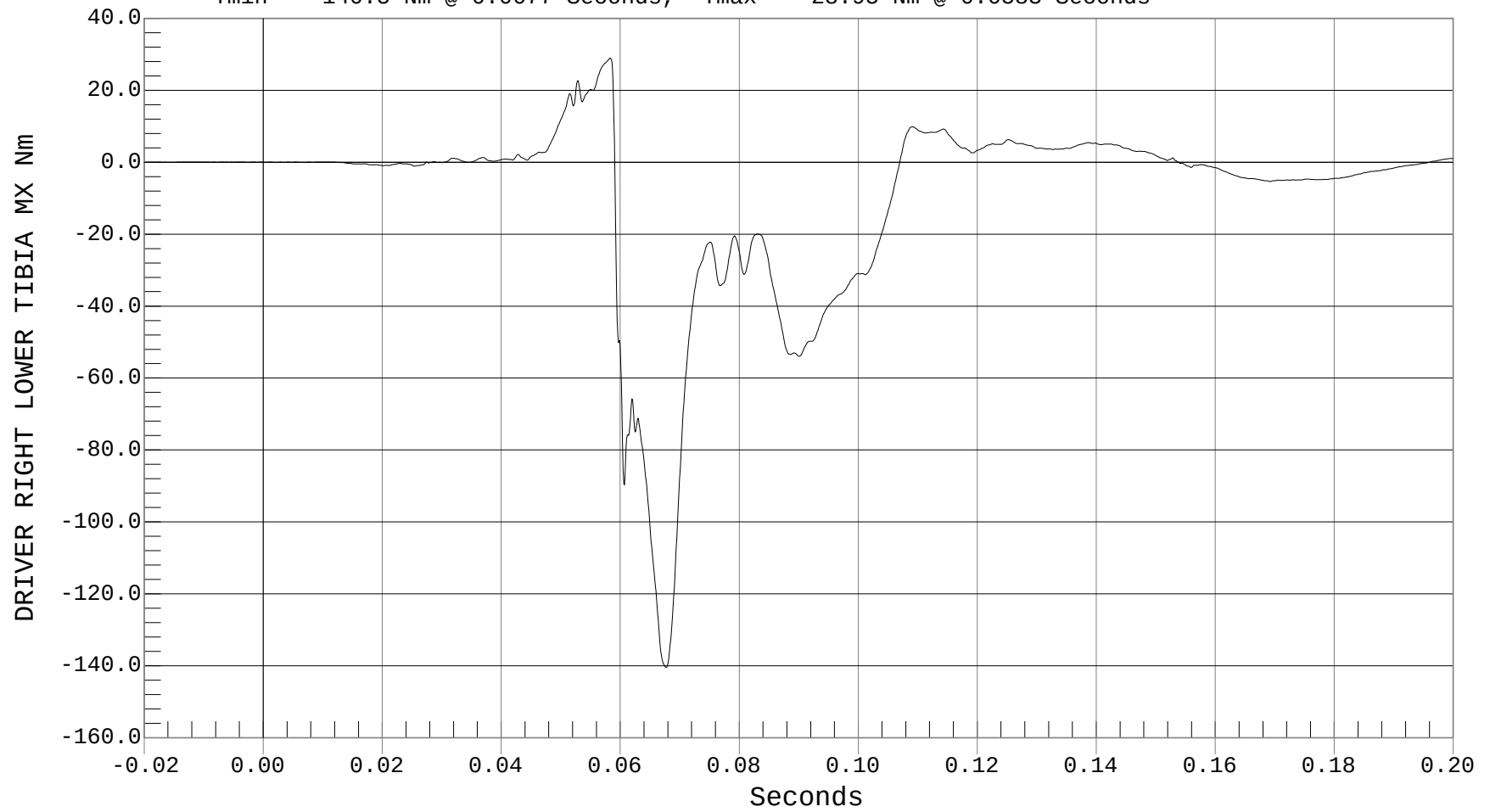
DRIVER RIGHT LOWER TIBIA MOMENT X

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 600

— 1 DRIVER RIGHT LOWER TIBIA MX, b00095MF.M72

Ymin = -140.5 Nm @ 0.0677 Seconds, Ymax = 28.95 Nm @ 0.0583 Seconds





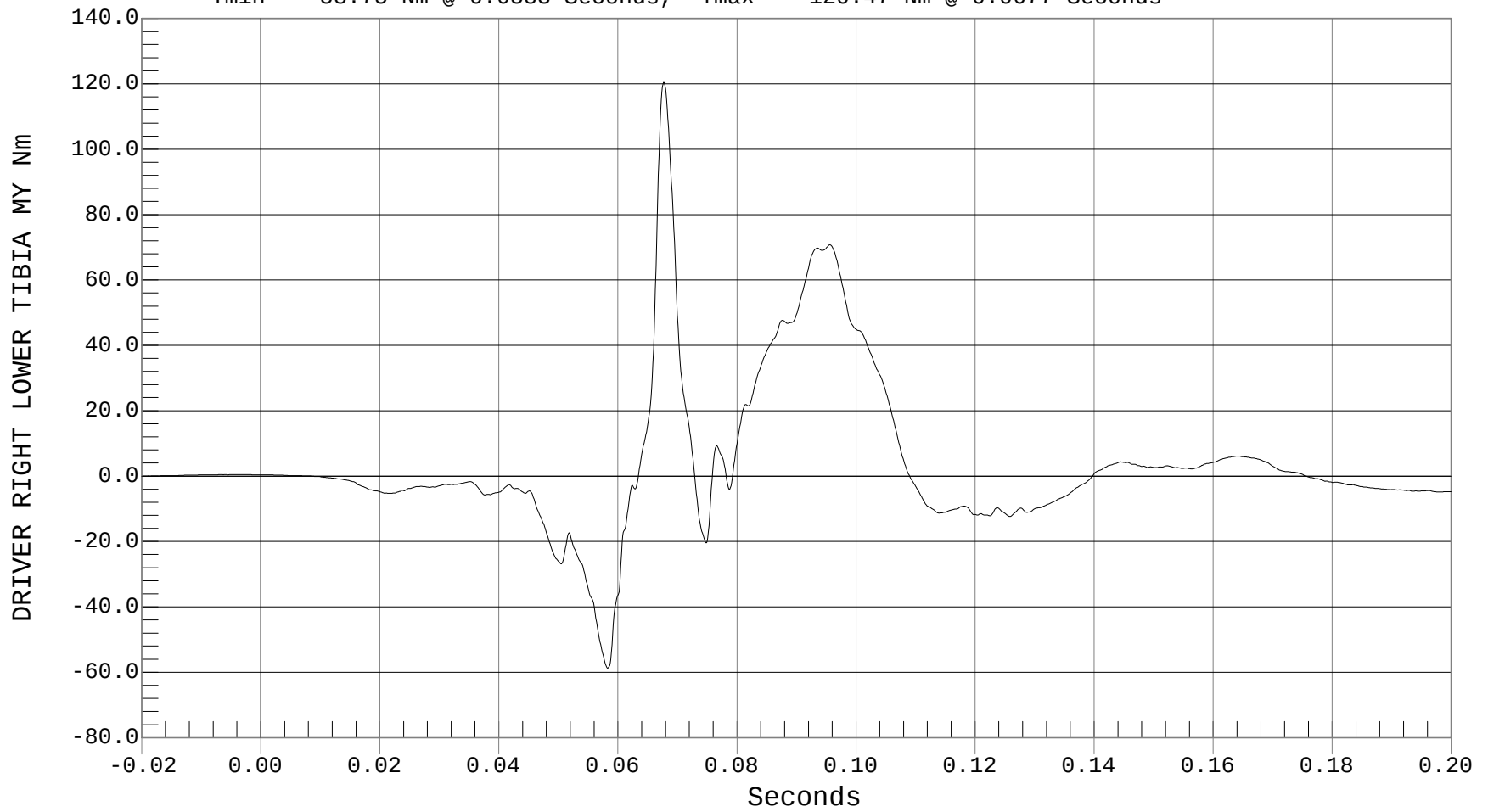
DRIVER RIGHT LOWER TIBIA MOMENT Y

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 600

— 1 DRIVER RIGHT LOWER TIBIA MY, b00095MF.M73

Ymin = -58.75 Nm @ 0.0583 Seconds, Ymax = 120.47 Nm @ 0.0677 Seconds





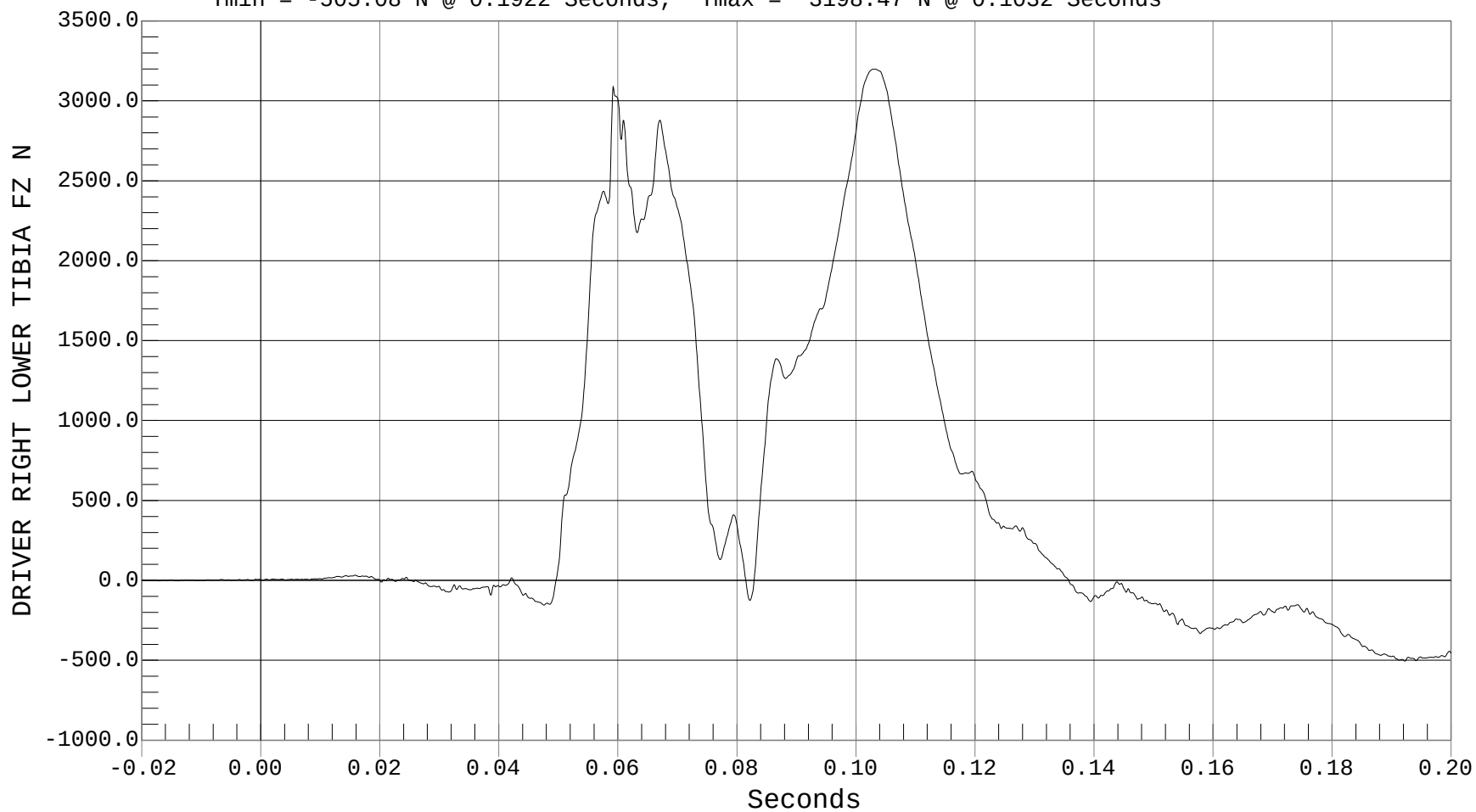
DRIVER RIGHT LOWER TIBIA FORCE Z

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 600

— 1 DRIVER RIGHT LOWER TIBIA FZ, b00095FF.F74

Ymin = -505.08 N @ 0.1922 Seconds, Ymax = 3198.47 N @ 0.1032 Seconds





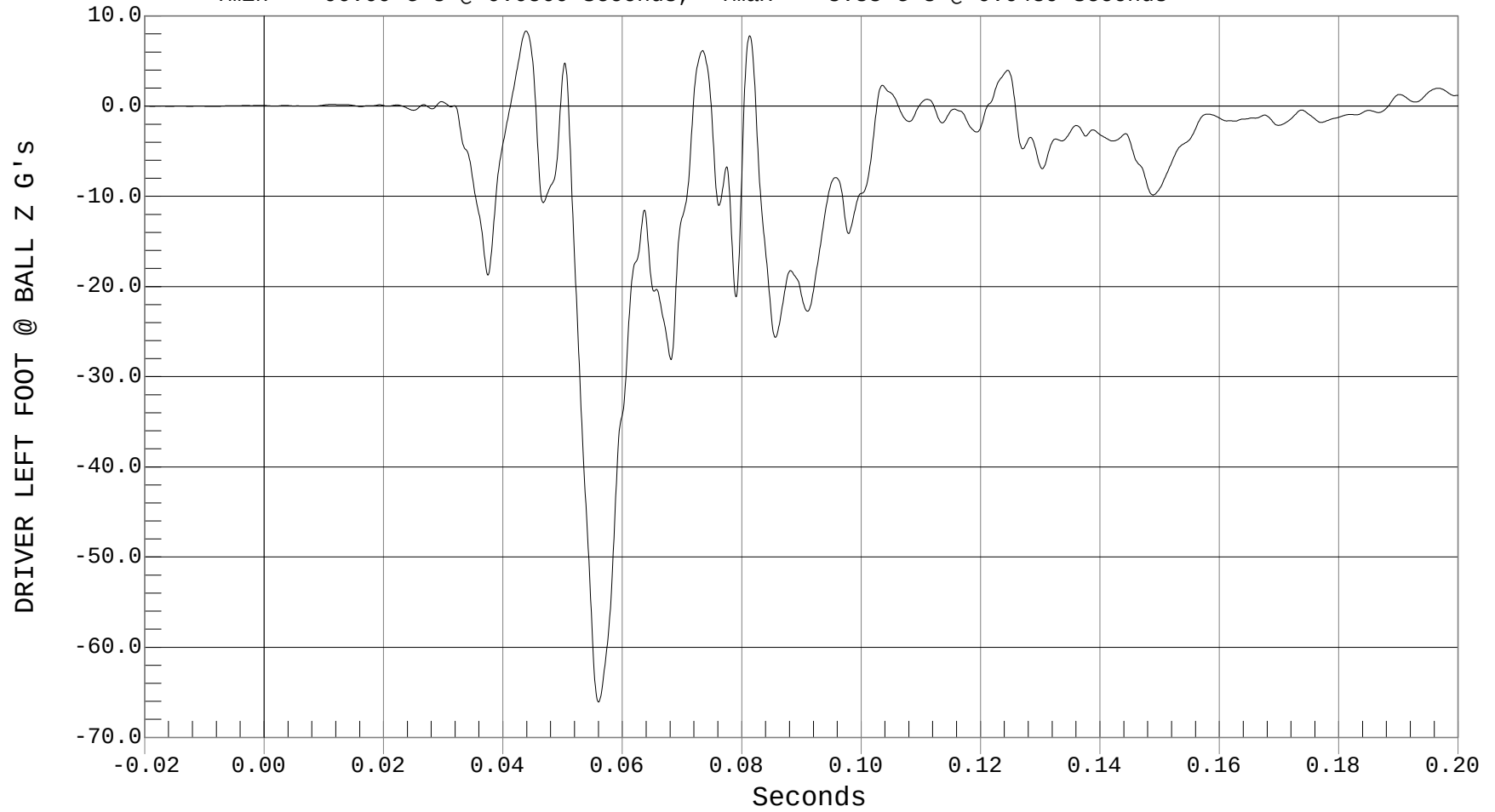
DRIVER LEFT FOOT @ BALL Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 DRIVER LEFT FOOT @ BALL Z, c00095AF.A12

Ymin = -66.09 G's @ 0.0560 Seconds, Ymax = 8.33 G's @ 0.0439 Seconds





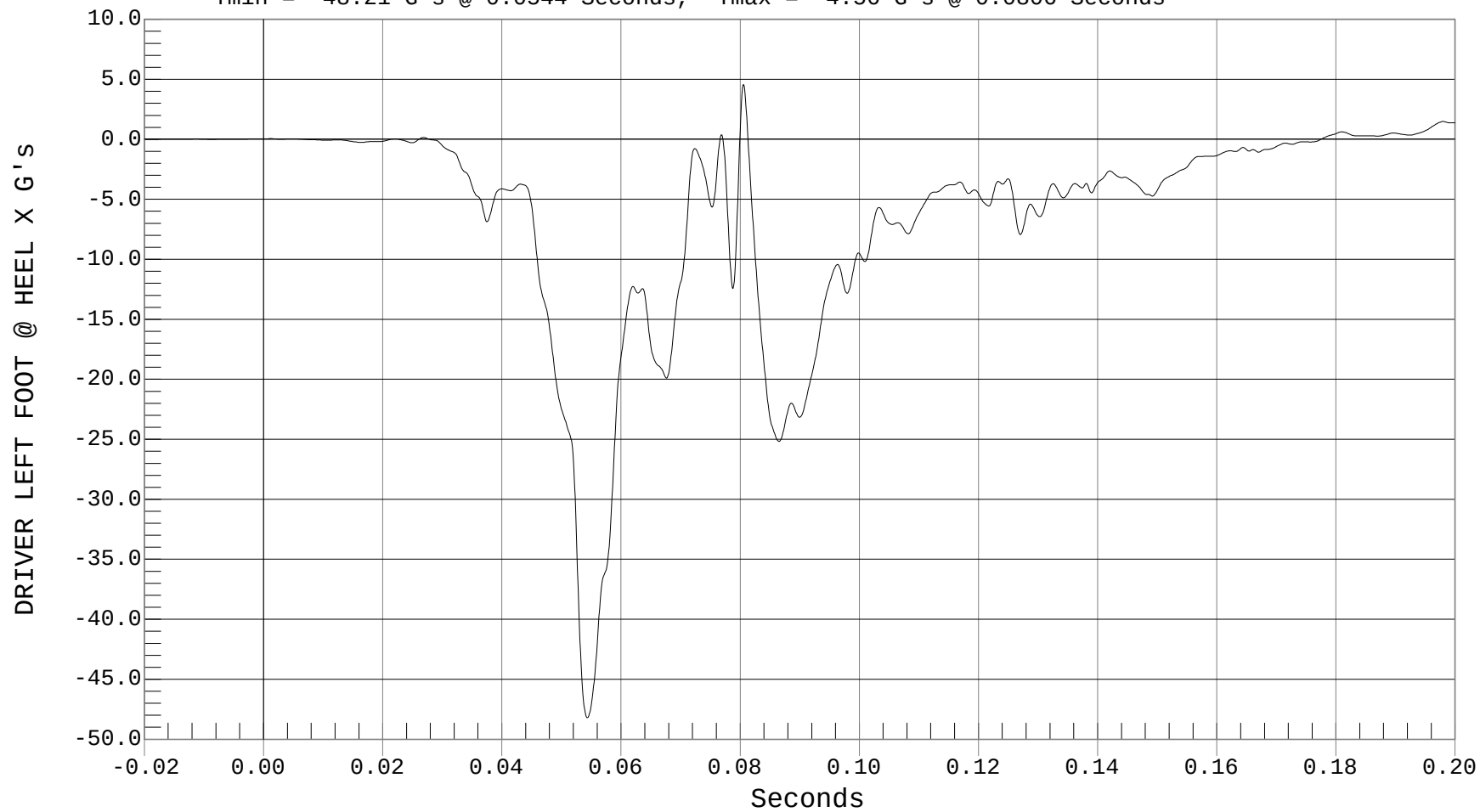
DRIVER LEFT FOOT @ HEEL X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 DRIVER LEFT FOOT @ HEEL X, c00095AF.A10

Ymin = -48.21 G's @ 0.0544 Seconds, Ymax = 4.56 G's @ 0.0806 Seconds





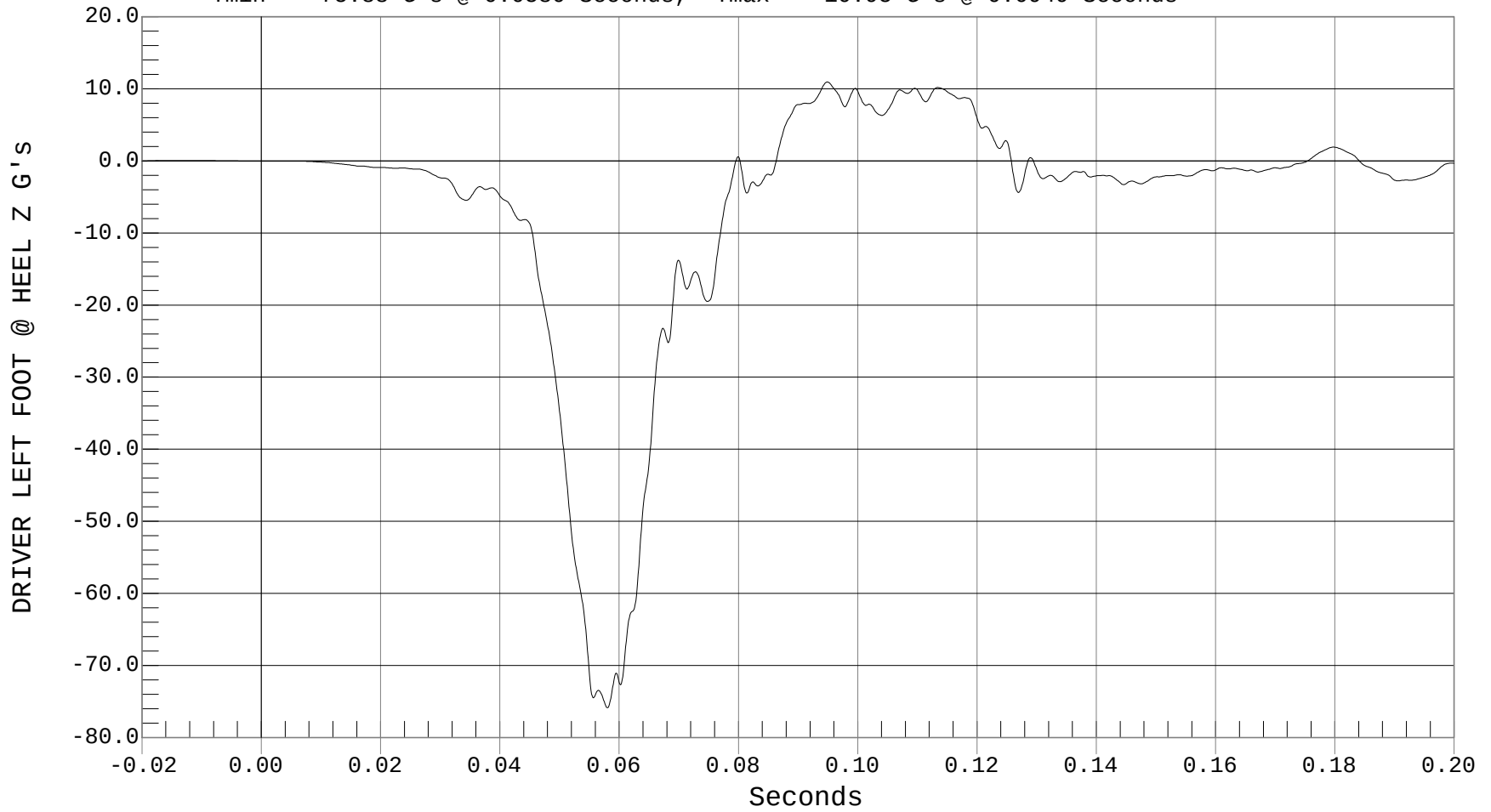
DRIVER LEFT FOOT @ HEEL Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 DRIVER LEFT FOOT @ HEEL Z, c00095AF.A11

Ymin = -75.88 G's @ 0.0580 Seconds, Ymax = 10.95 G's @ 0.0949 Seconds





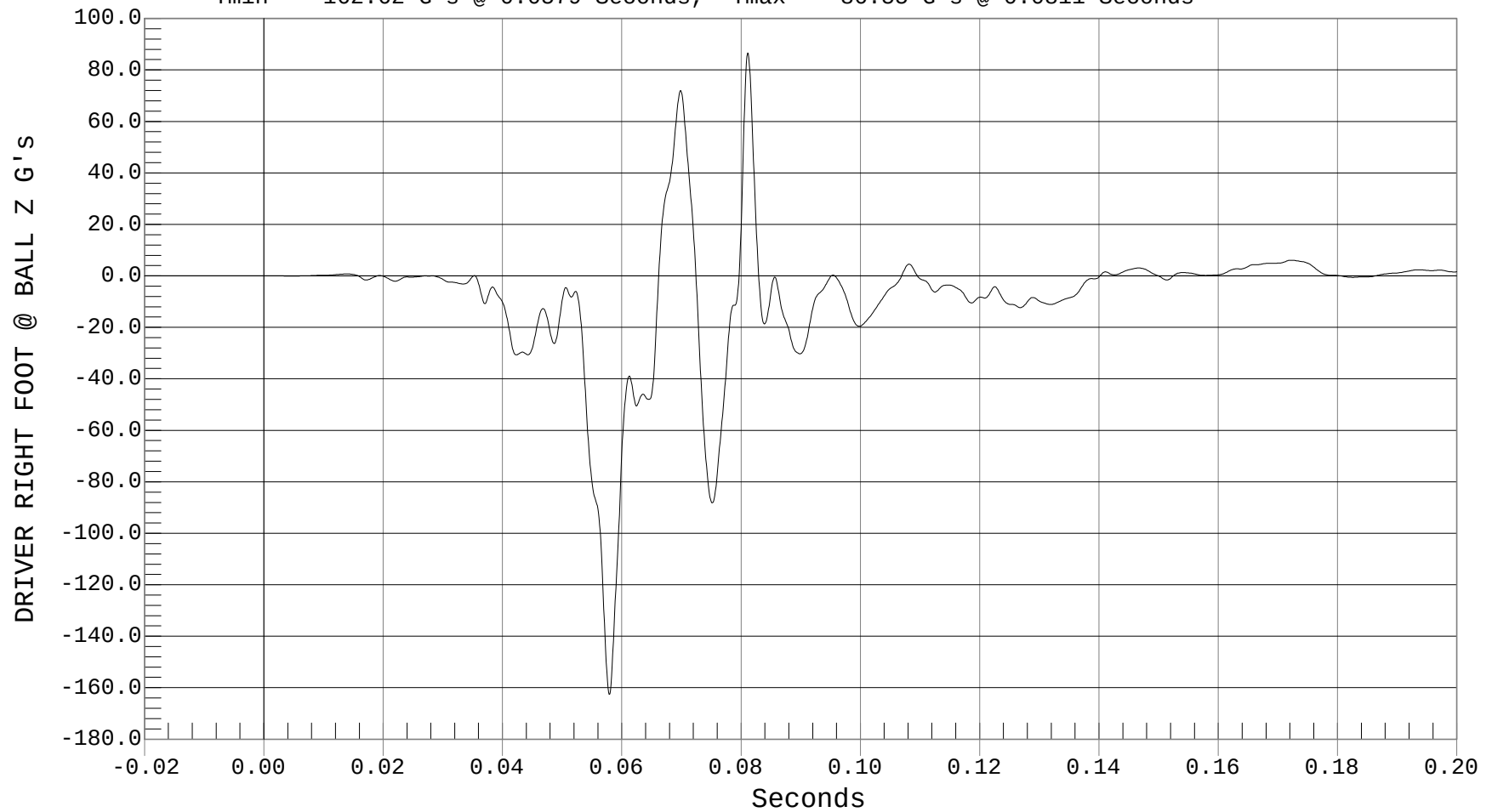
DRIVER RIGHT FOOT @ BALL Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 DRIVER RIGHT FOOT @ BALL Z, b00095AF.A95

Ymin = -162.62 G's @ 0.0579 Seconds, Ymax = 86.55 G's @ 0.0811 Seconds





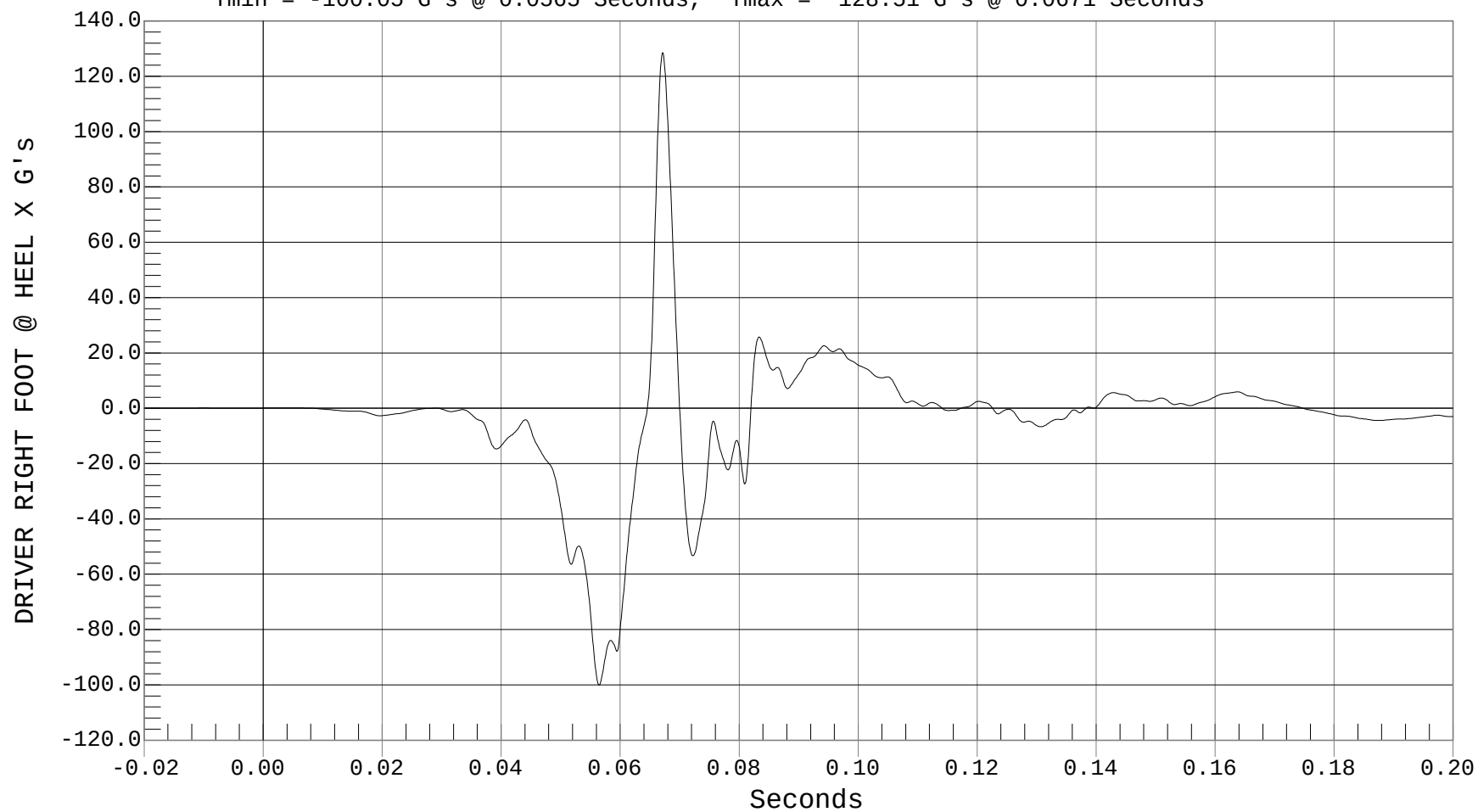
DRIVER RIGHT FOOT @ HEEL X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 DRIVER RIGHT FOOT @ HEEL X, b00095AF.A93

Ymin = -100.05 G's @ 0.0565 Seconds, Ymax = 128.51 G's @ 0.0671 Seconds





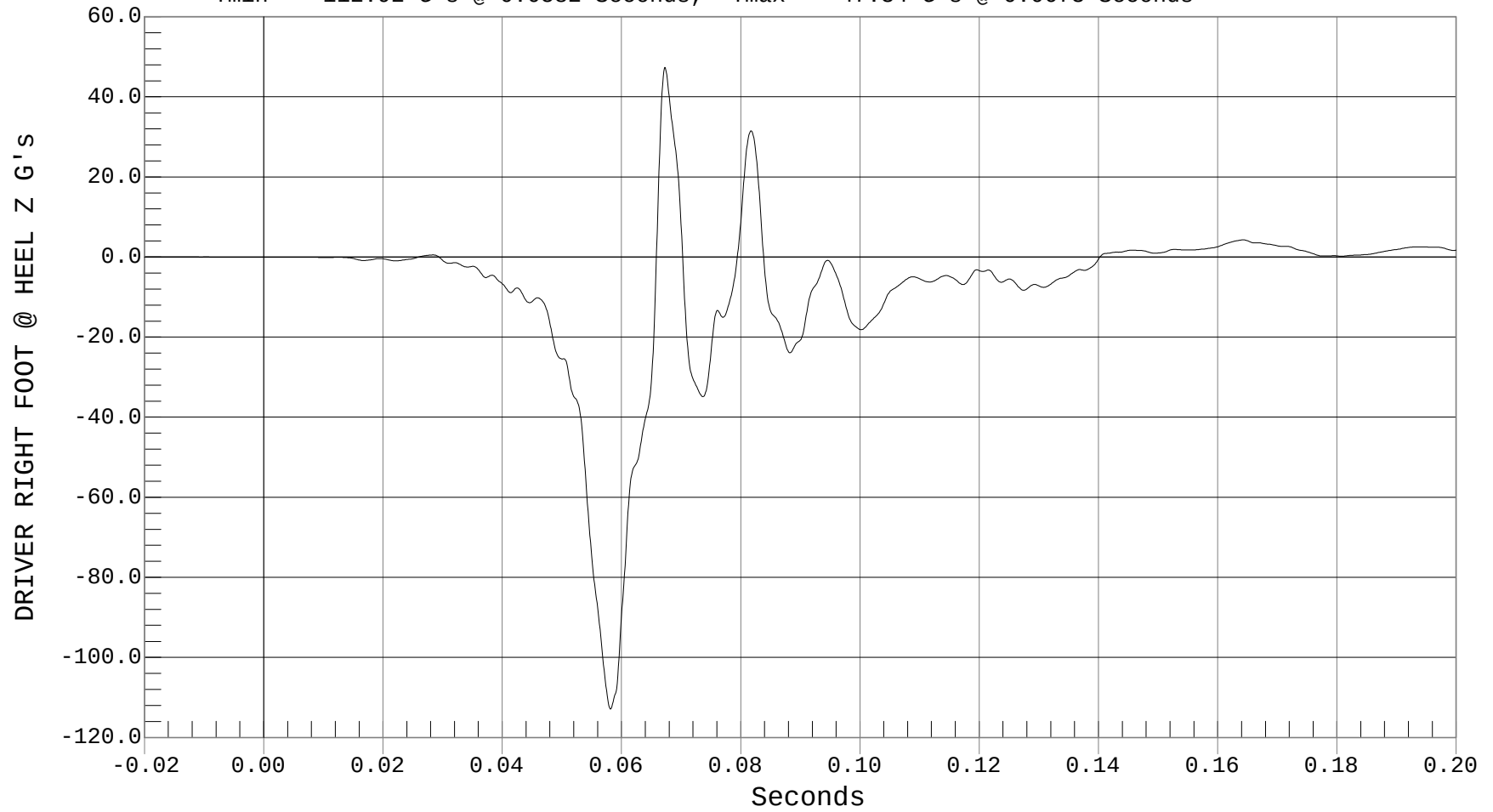
DRIVER RIGHT FOOT @ HEEL Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 DRIVER RIGHT FOOT @ HEEL Z, b00095AF.A94

Ymin = -112.92 G's @ 0.0582 Seconds, Ymax = 47.34 G's @ 0.0673 Seconds





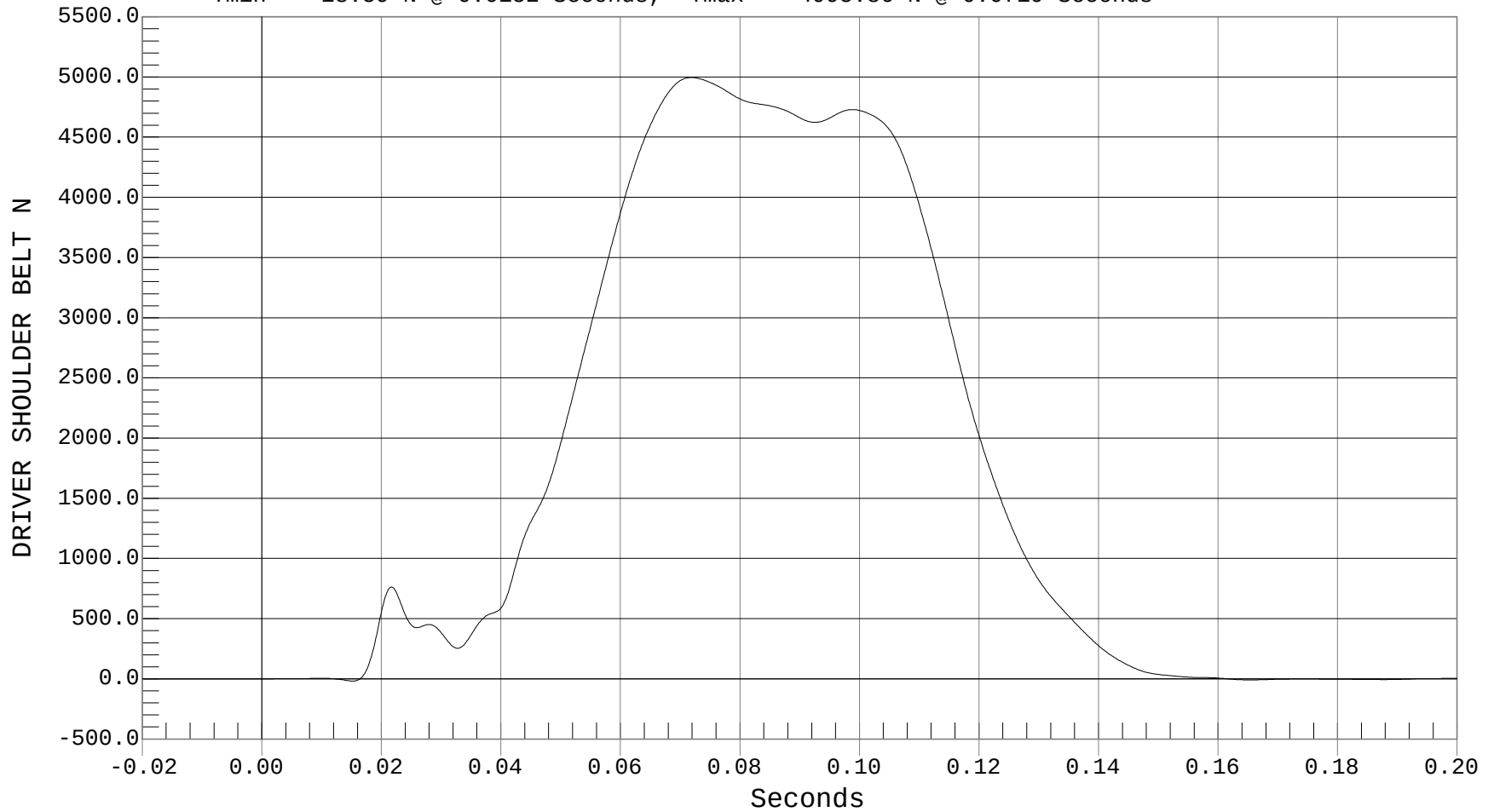
DRIVER SHOULDER BELT FORCE

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 60

— 1 DRIVER SHOULDER BELT, b00095FF.F65

Ymin = -18.59 N @ 0.0152 Seconds, Ymax = 4995.86 N @ 0.0719 Seconds





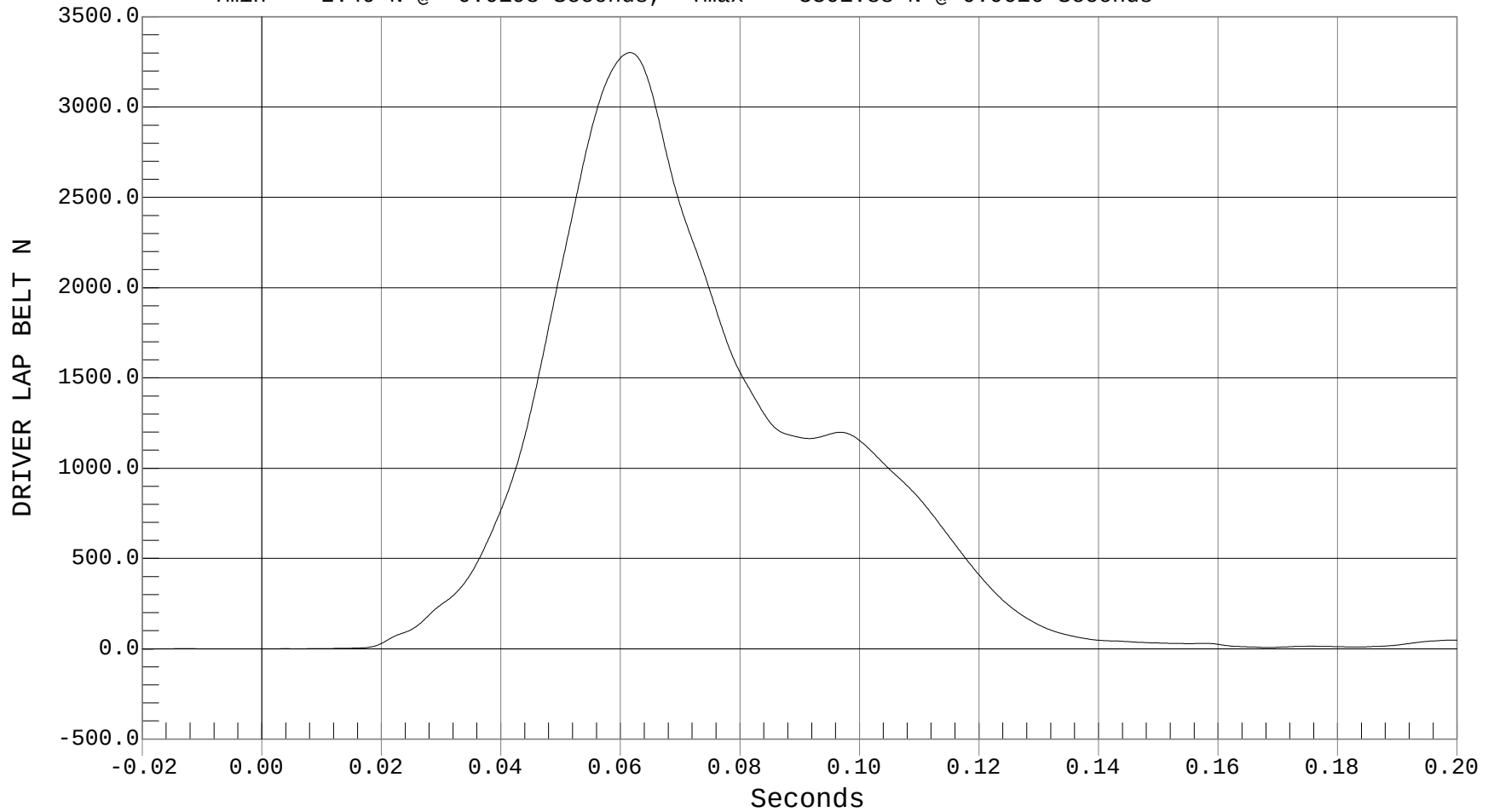
DRIVER LAP BELT FORCE

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 60

— 1 DRIVER LAP BELT, b00095FF.F66

Ymin = -2.49 N @ -0.0198 Seconds, Ymax = 3301.88 N @ 0.0616 Seconds





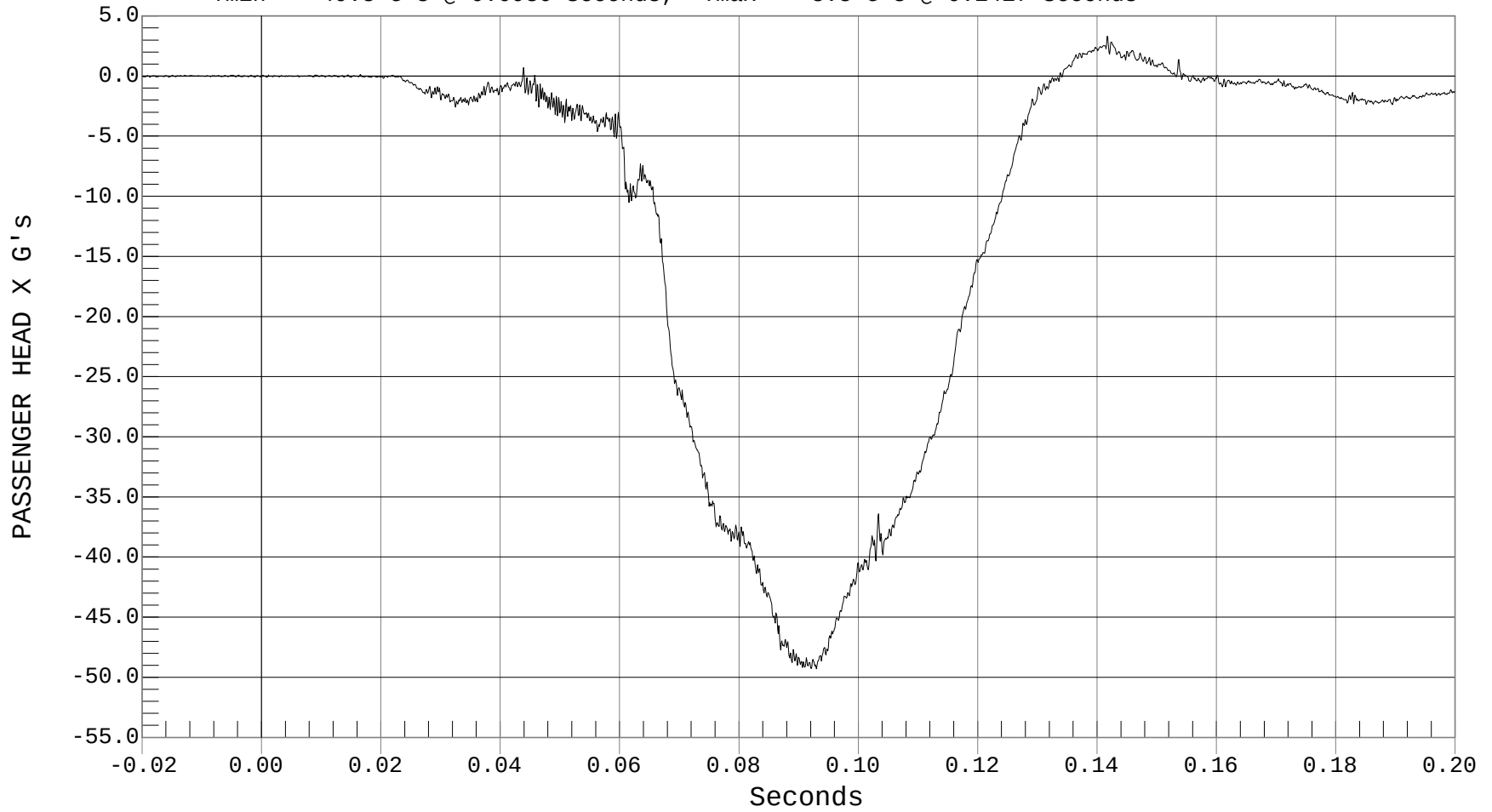
PASSENGER HEAD X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 1000

— 1 PASSENGER HEAD X, b00095AT.A19

Ymin = -49.3 G's @ 0.0930 Seconds, Ymax = 3.3 G's @ 0.1417 Seconds





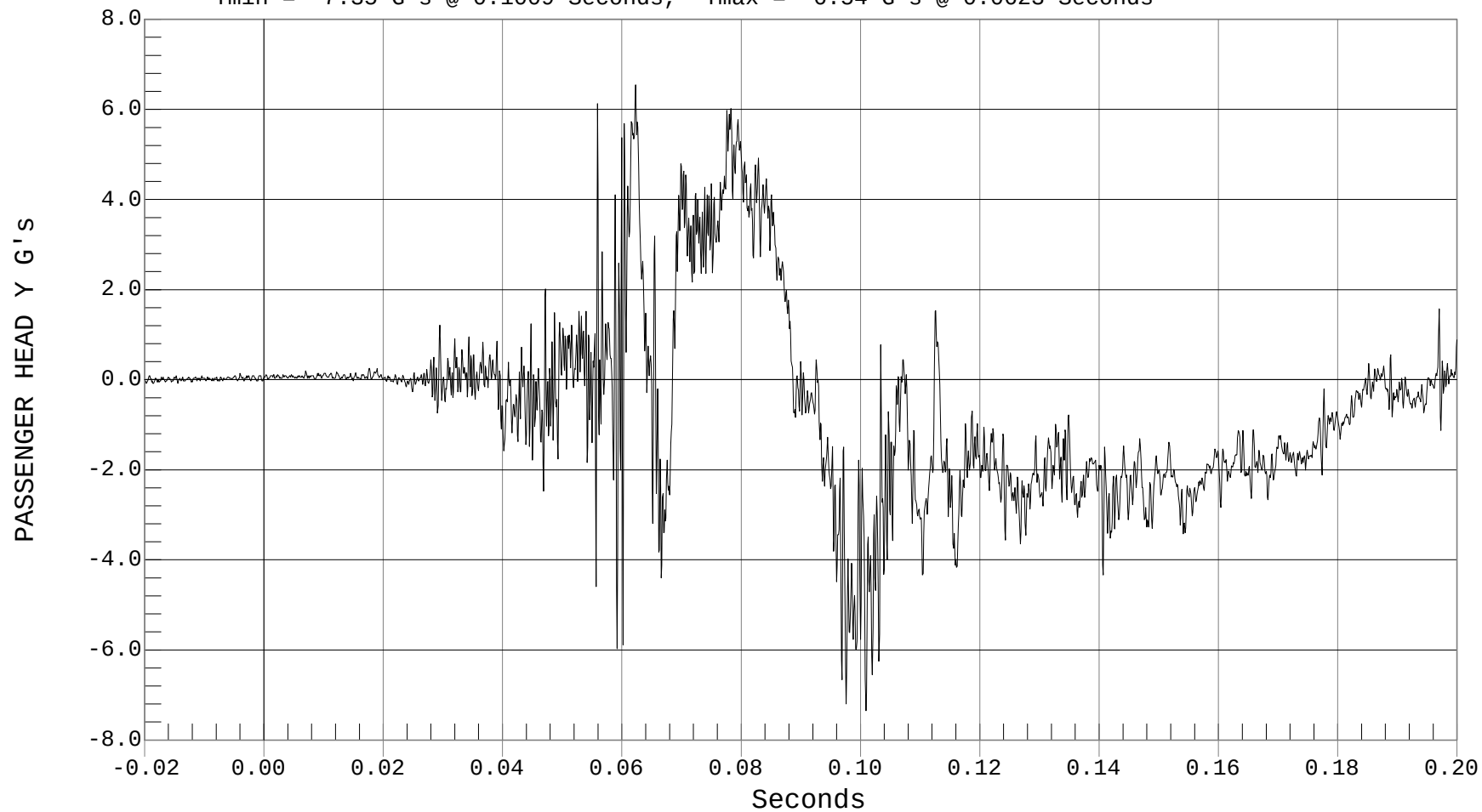
PASSENGER HEAD Y ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 1000

— 1 PASSENGER HEAD Y, b00095AT.A20

Ymin = -7.35 G's @ 0.1009 Seconds, Ymax = 6.54 G's @ 0.0623 Seconds





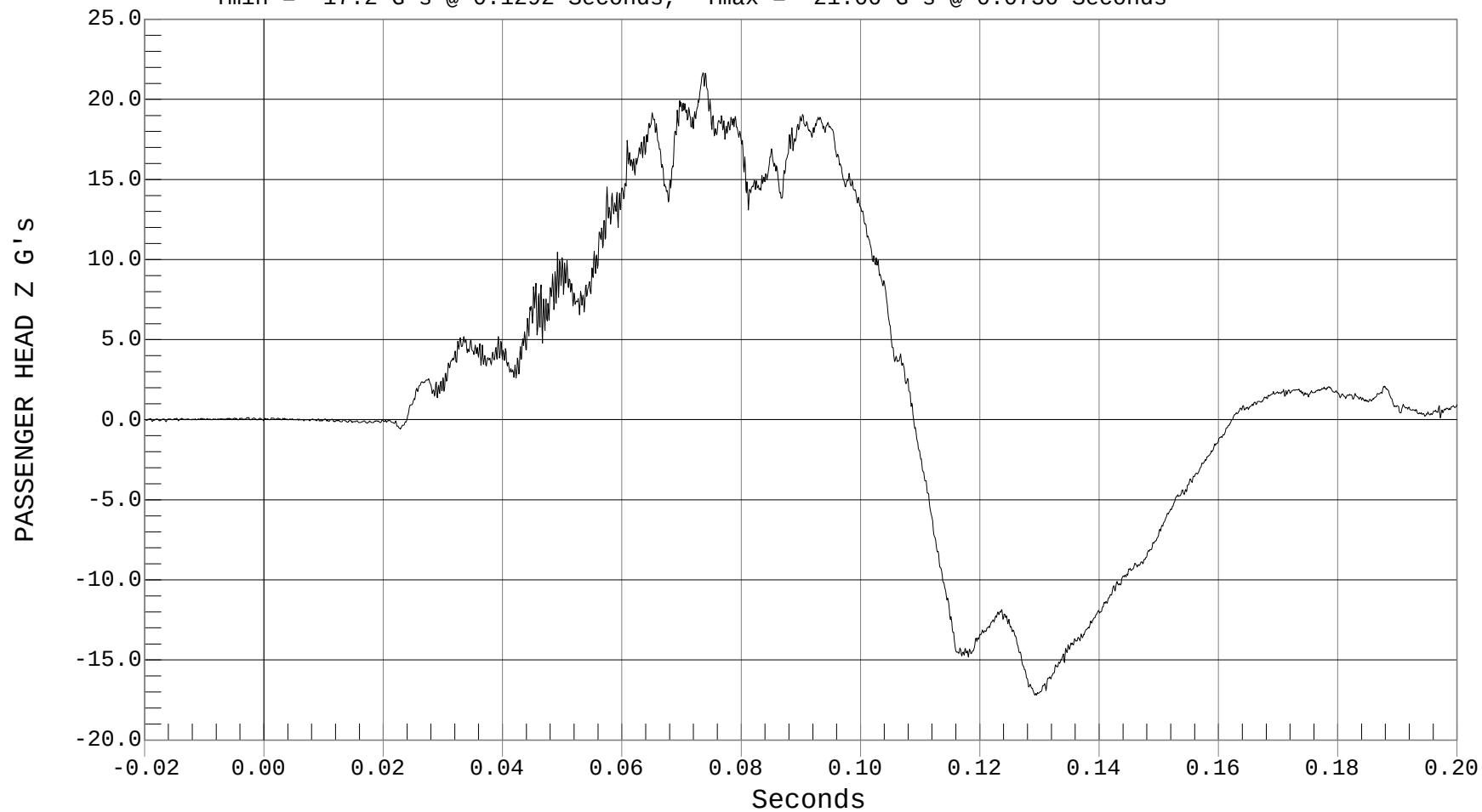
PASSENGER HEAD Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 1000

— 1 PASSENGER HEAD Z, b00095AT.A21

Ymin = -17.2 G's @ 0.1292 Seconds, Ymax = 21.66 G's @ 0.0736 Seconds





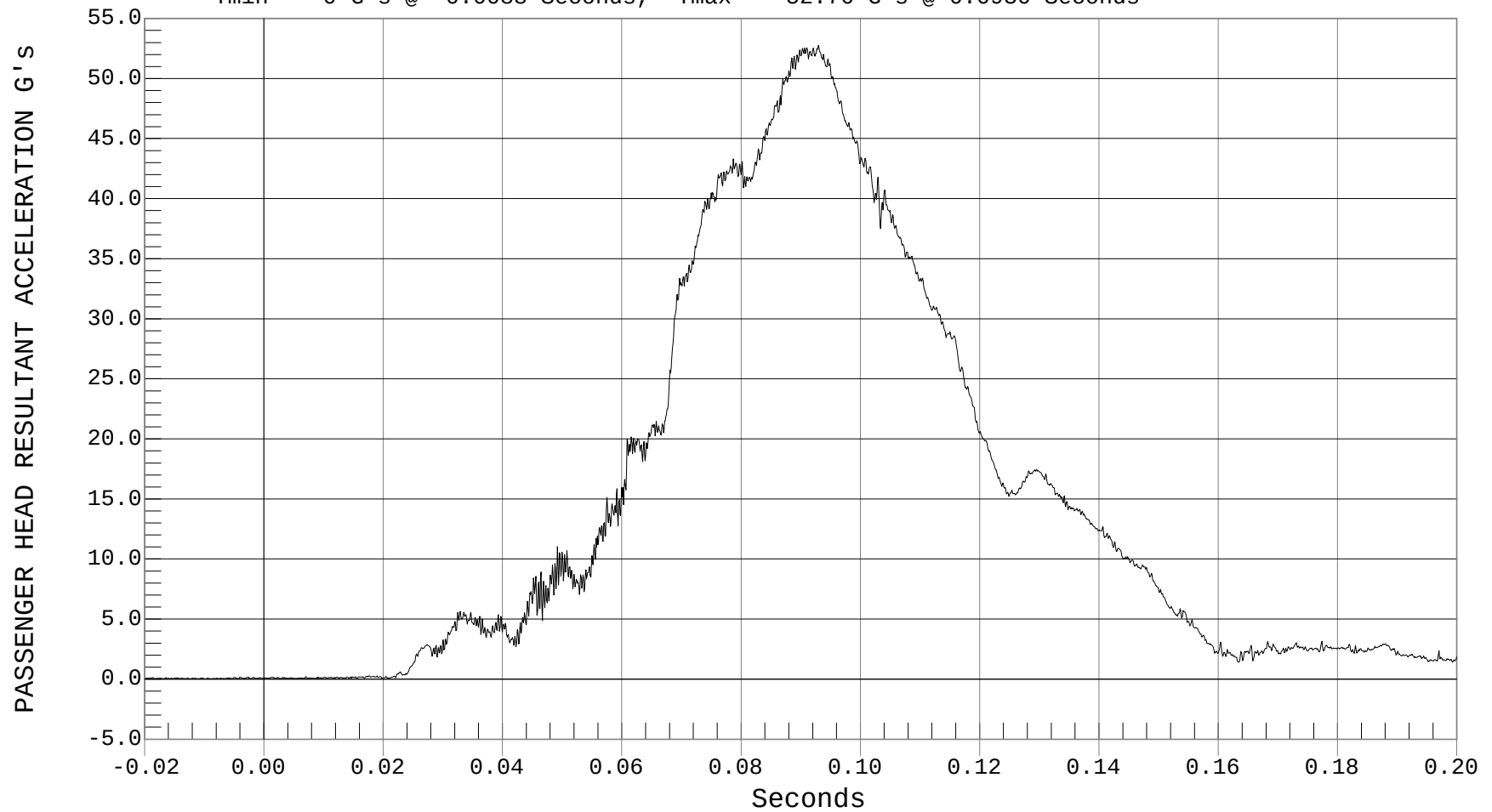
PASSENGER HEAD RESULTANT ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 1000

— 1 PASSENGER HEAD RESULTANT ACCELERATION, b00095AV.A19

Ymin = 0 G's @ -0.0088 Seconds, Ymax = 52.76 G's @ 0.0930 Seconds





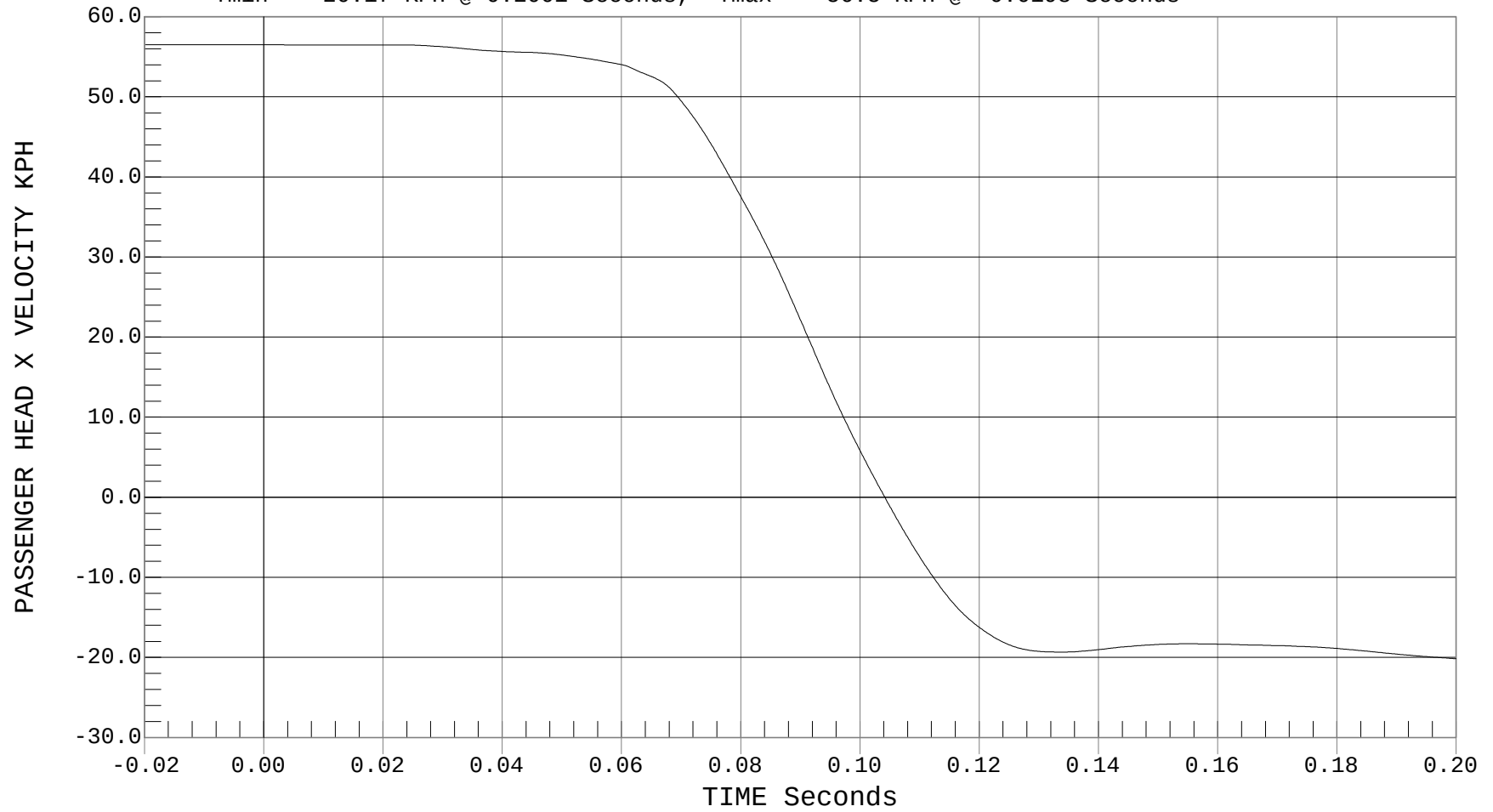
PASSENGER HEAD X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 PASSENGER HEAD X VELOCITY, b00095AI.V19

Ymin = -20.17 KPH @ 0.2001 Seconds, Ymax = 56.5 KPH @ -0.0198 Seconds





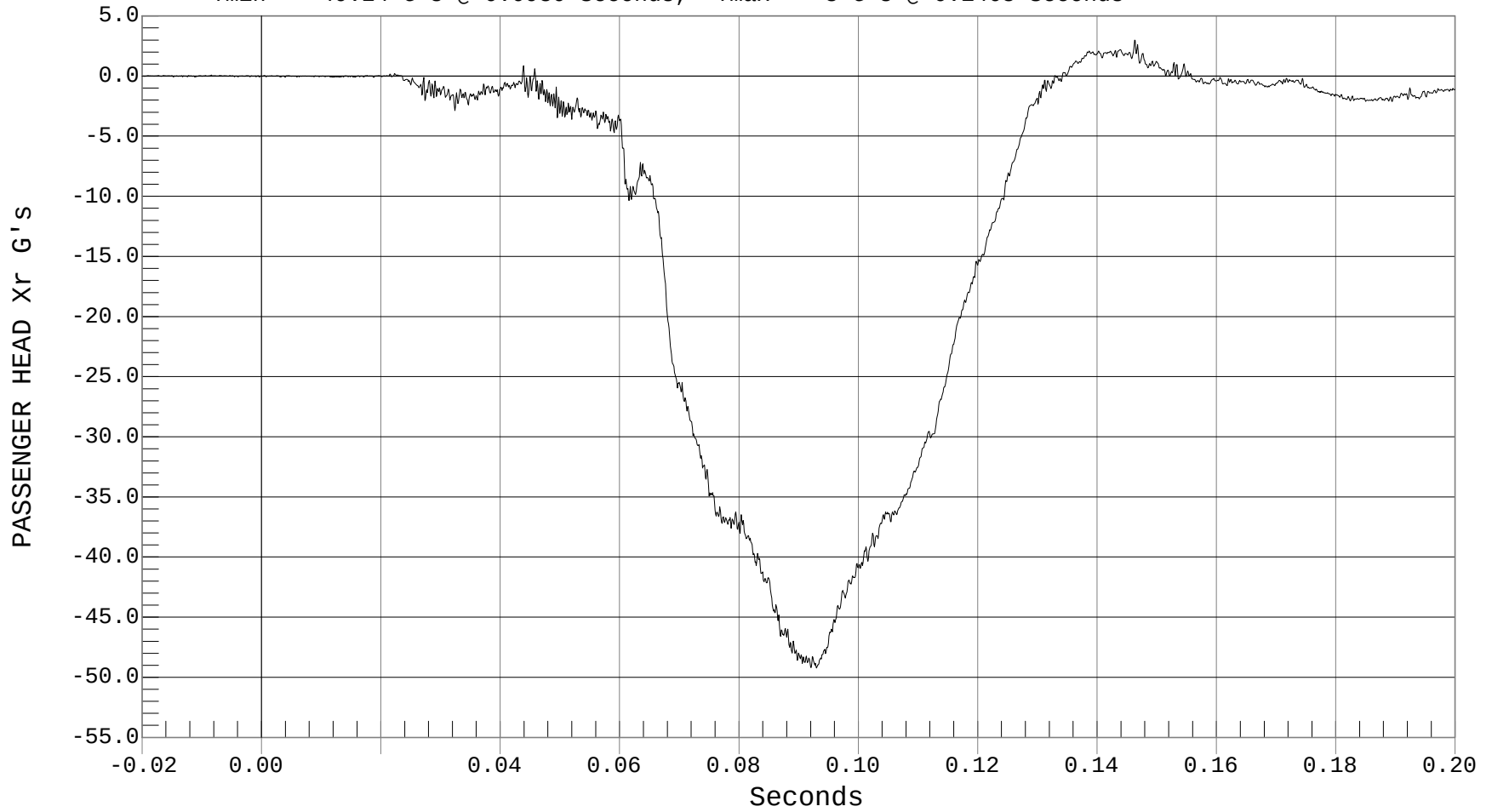
PASSENGER HEAD REDUNDANT X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 1000

— 1 PASSENGER HEAD Xr, b00095AT.A41

Ymin = -49.24 G's @ 0.0930 Seconds, Ymax = 3 G's @ 0.1463 Seconds





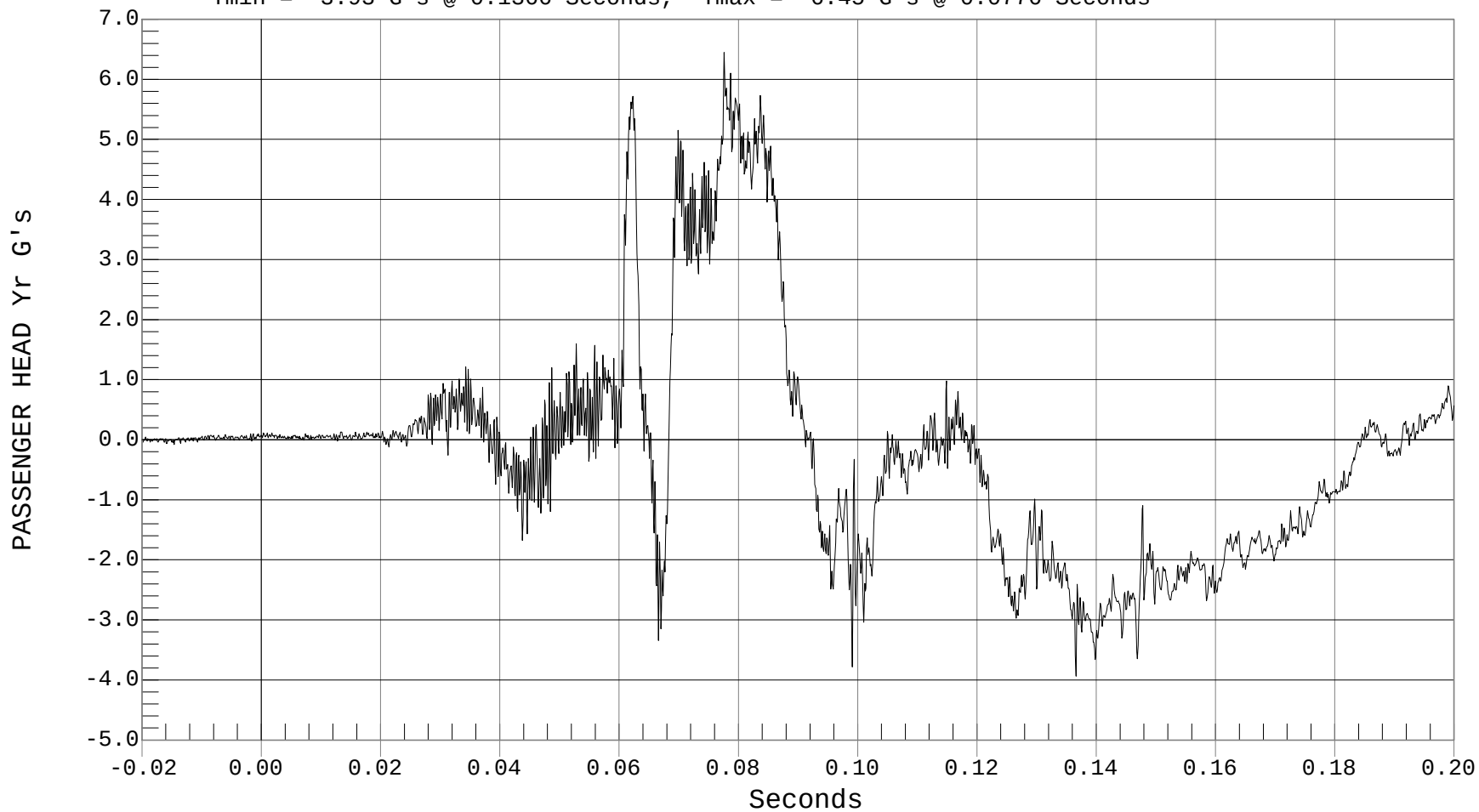
PASSENGER HEAD REDUNDANT Y ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 1000

— 1 PASSENGER HEAD Yr, b00095AT.A42

Ymin = -3.93 G's @ 0.1366 Seconds, Ymax = 6.45 G's @ 0.0776 Seconds





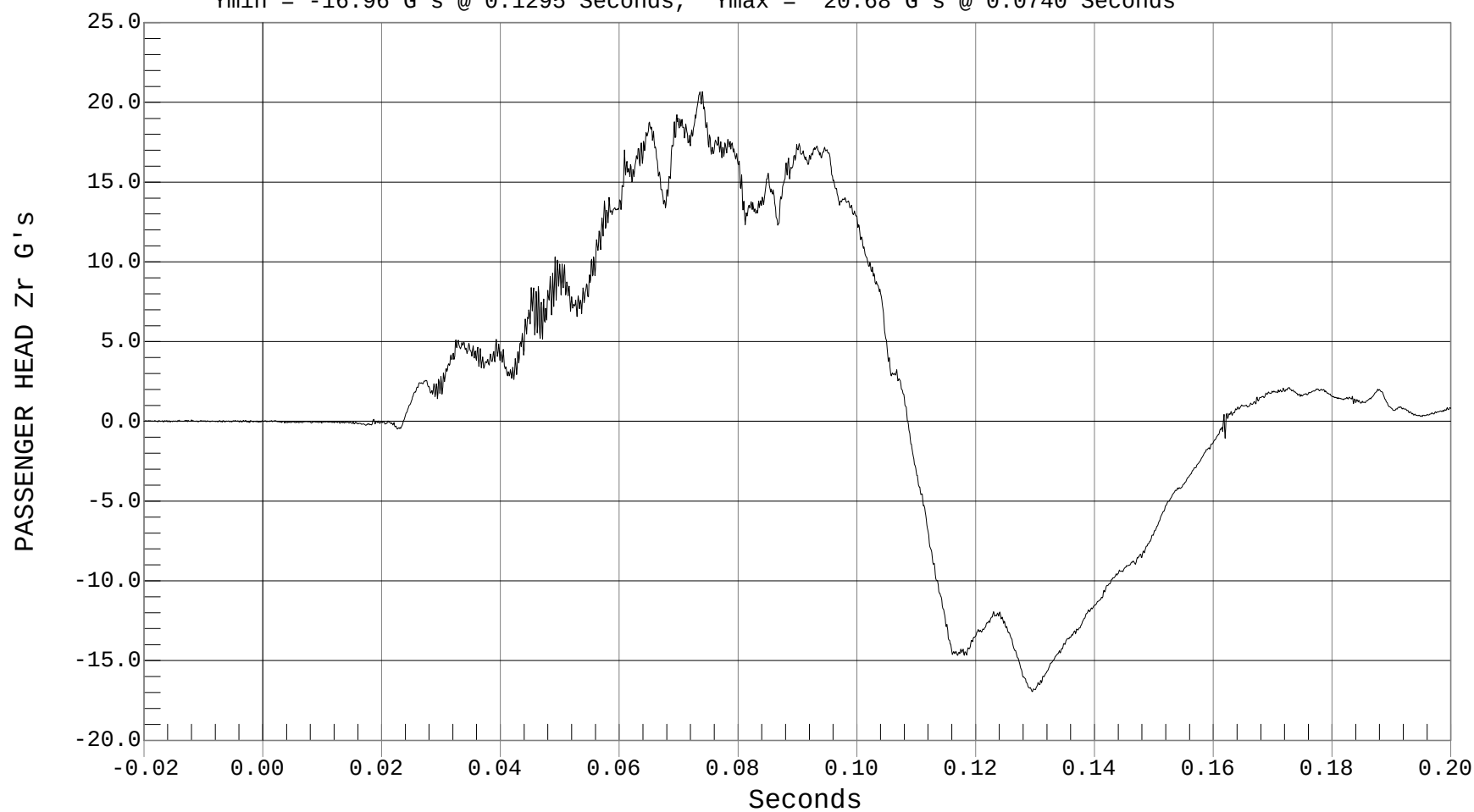
PASSENGER HEAD REDUNDANT Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 1000

— 1 PASSENGER HEAD Zr, b00095AT.A43

Ymin = -16.96 G's @ 0.1295 Seconds, Ymax = 20.68 G's @ 0.0740 Seconds





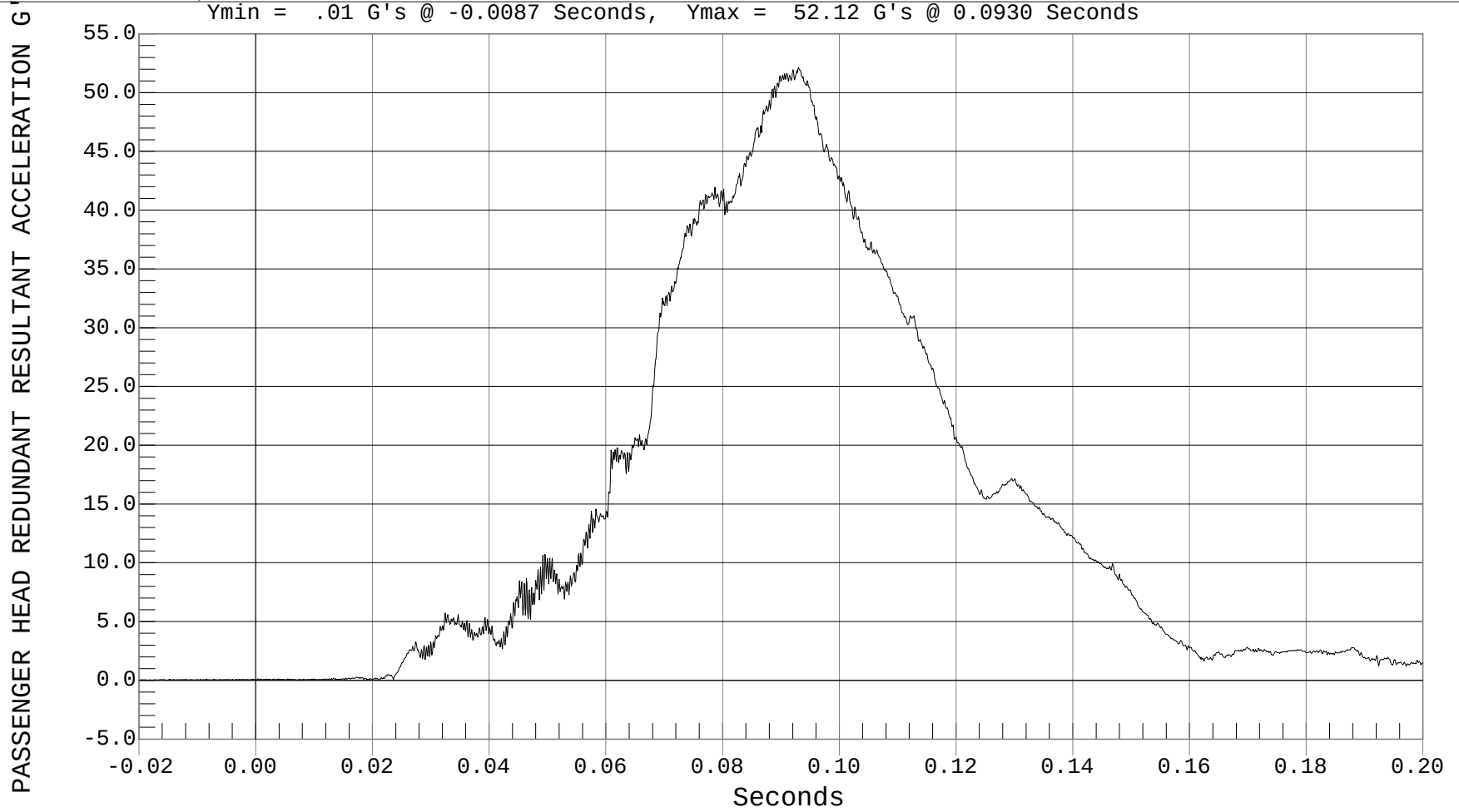
PASSENGER HEAD REDUNDANT RESULTANT ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 1000

— 1 PASSENGER HEAD REDUNDANT RESULTANT ACCELERATION, b00095AV.A41

Ymin = .01 G's @ -0.0087 Seconds, Ymax = 52.12 G's @ 0.0930 Seconds





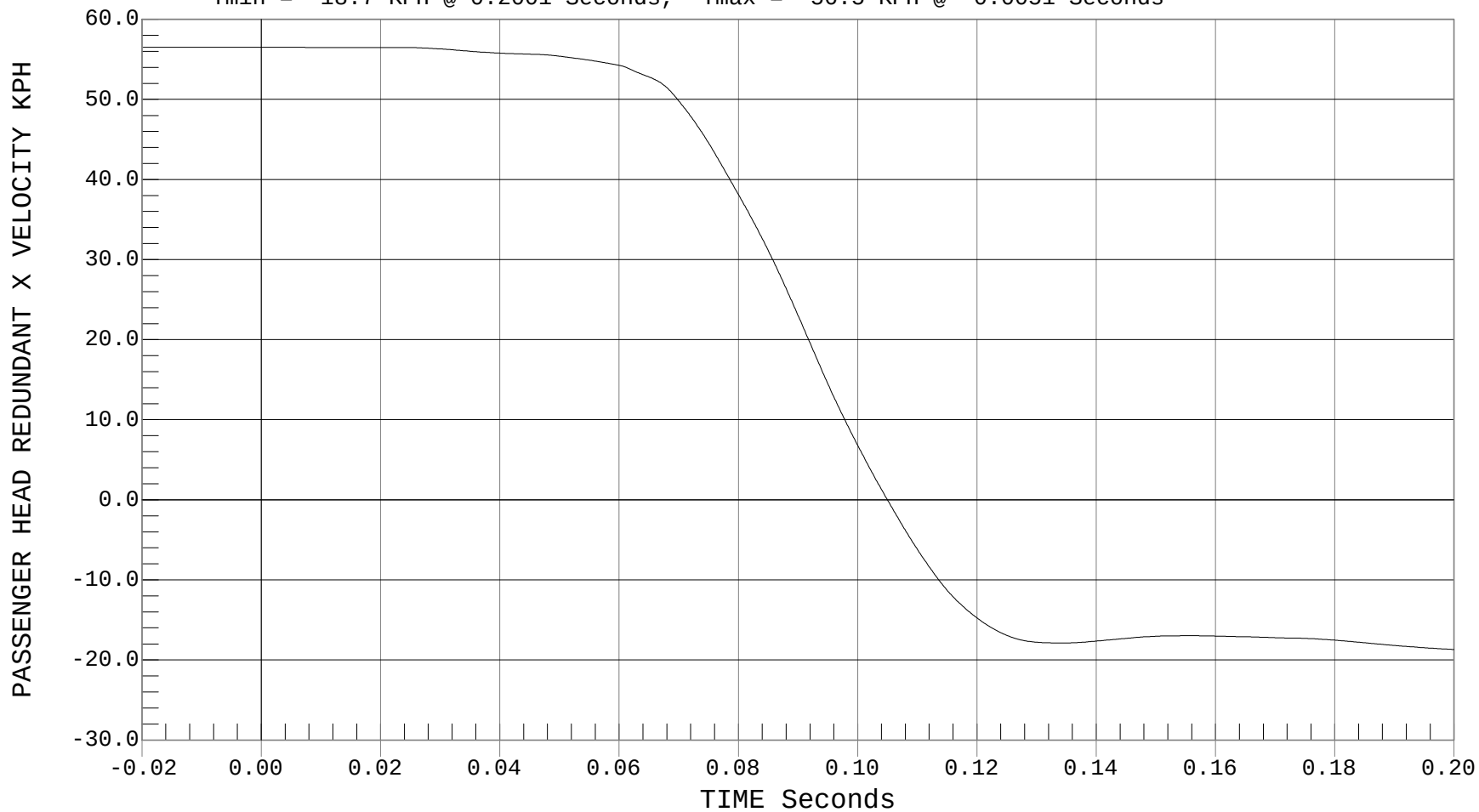
PASSENGER HEAD REDUNDANT X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 PASSENGER HEAD REDUNDANT X VELOCITY, b00095AI.V41

Ymin = -18.7 KPH @ 0.2001 Seconds, Ymax = 56.5 KPH @ -0.0051 Seconds





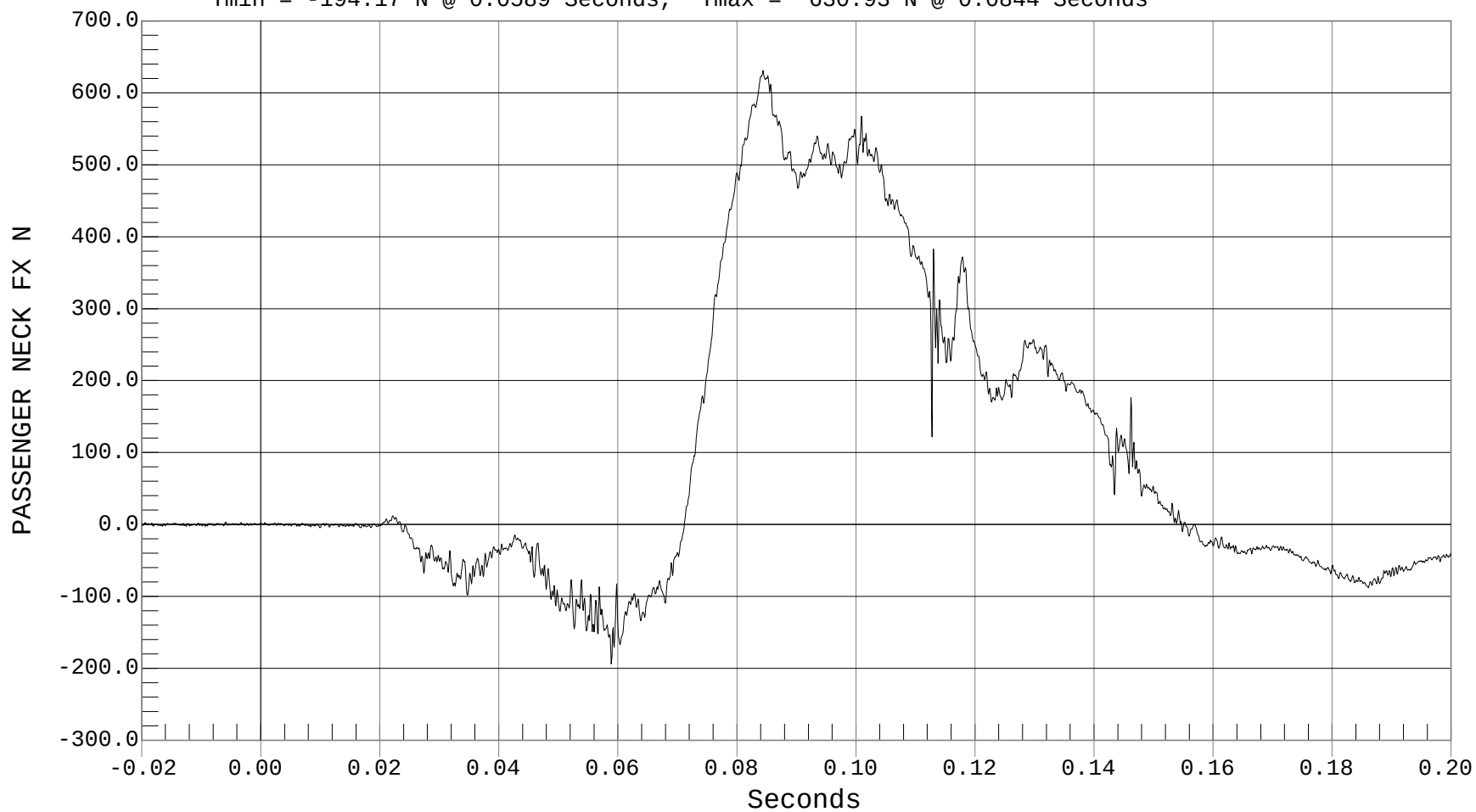
PASSENGER NECK FORCE X

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 1000

— 1 PASSENGER NECK FX, b00095FT.F44

Ymin = -194.17 N @ 0.0589 Seconds, Ymax = 630.93 N @ 0.0844 Seconds





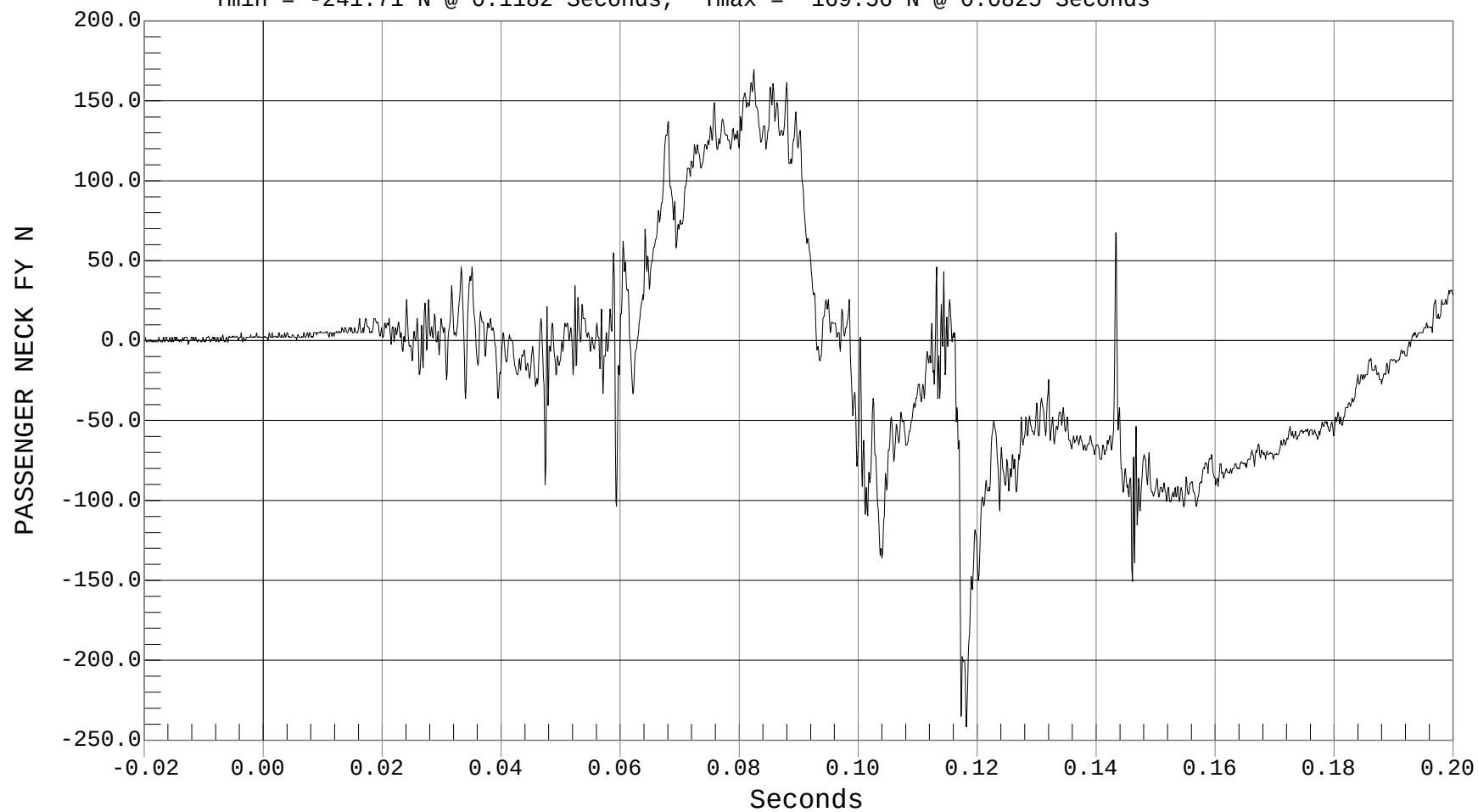
PASSENGER NECK FORCE Y

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 1000

— 1 PASSENGER NECK FY, b00095FT.F45

Ymin = -241.71 N @ 0.1182 Seconds, Ymax = 169.56 N @ 0.0825 Seconds





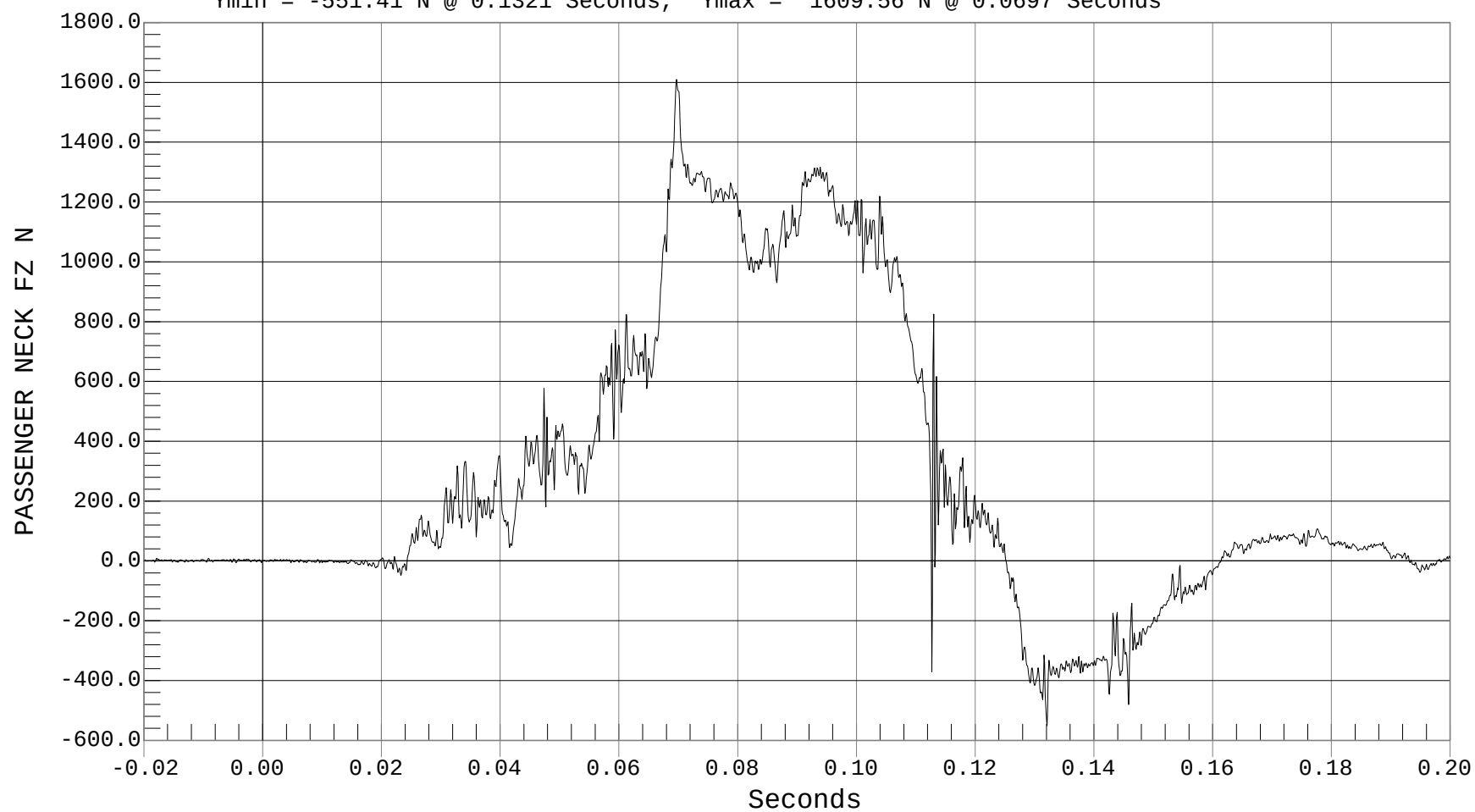
PASSENGER NECK FORCE Z

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 1000

— 1 PASSENGER NECK FZ, b00095FT.F46

Ymin = -551.41 N @ 0.1321 Seconds, Ymax = 1609.56 N @ 0.0697 Seconds





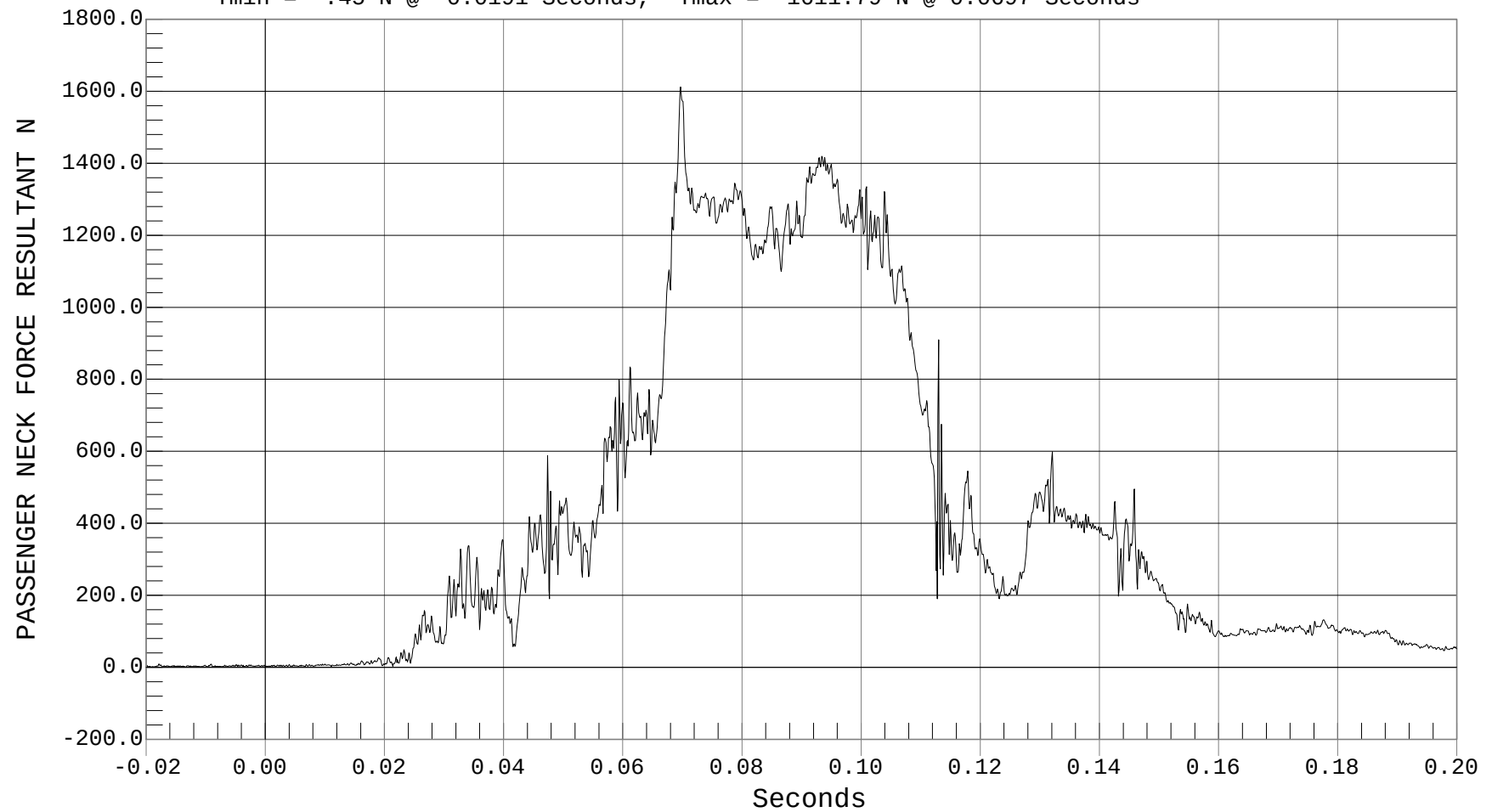
PASSENGER NECK FORCE RESULTANT

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 1000

— 1 PASSENGER NECK FORCE RESULTANT, b00095FV.F44

Ymin = .45 N @ -0.0191 Seconds, Ymax = 1611.79 N @ 0.0697 Seconds





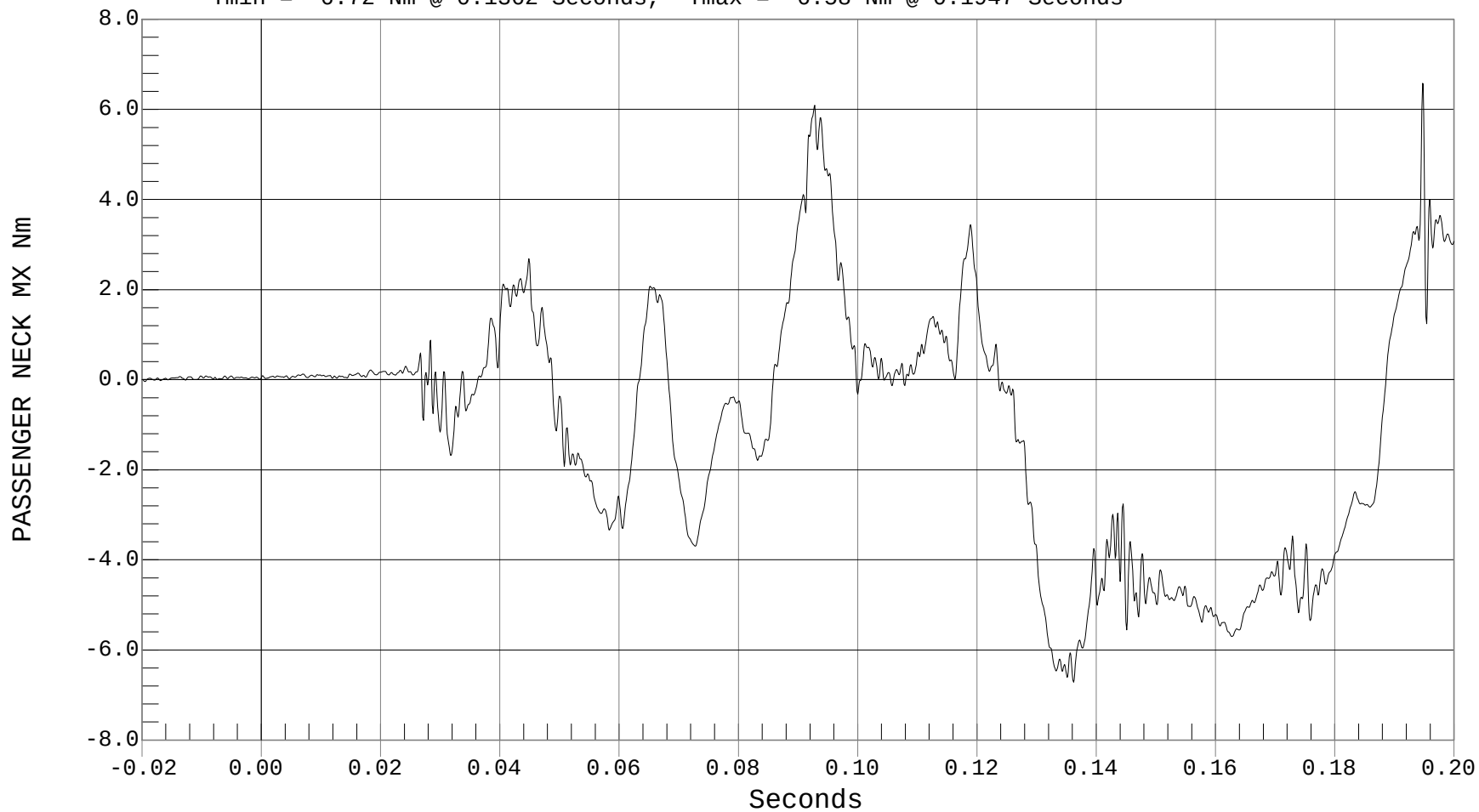
PASSENGER NECK MOMENT X

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 600

— 1 PASSENGER NECK MX, b00095MF.M47

Ymin = -6.72 Nm @ 0.1362 Seconds, Ymax = 6.58 Nm @ 0.1947 Seconds





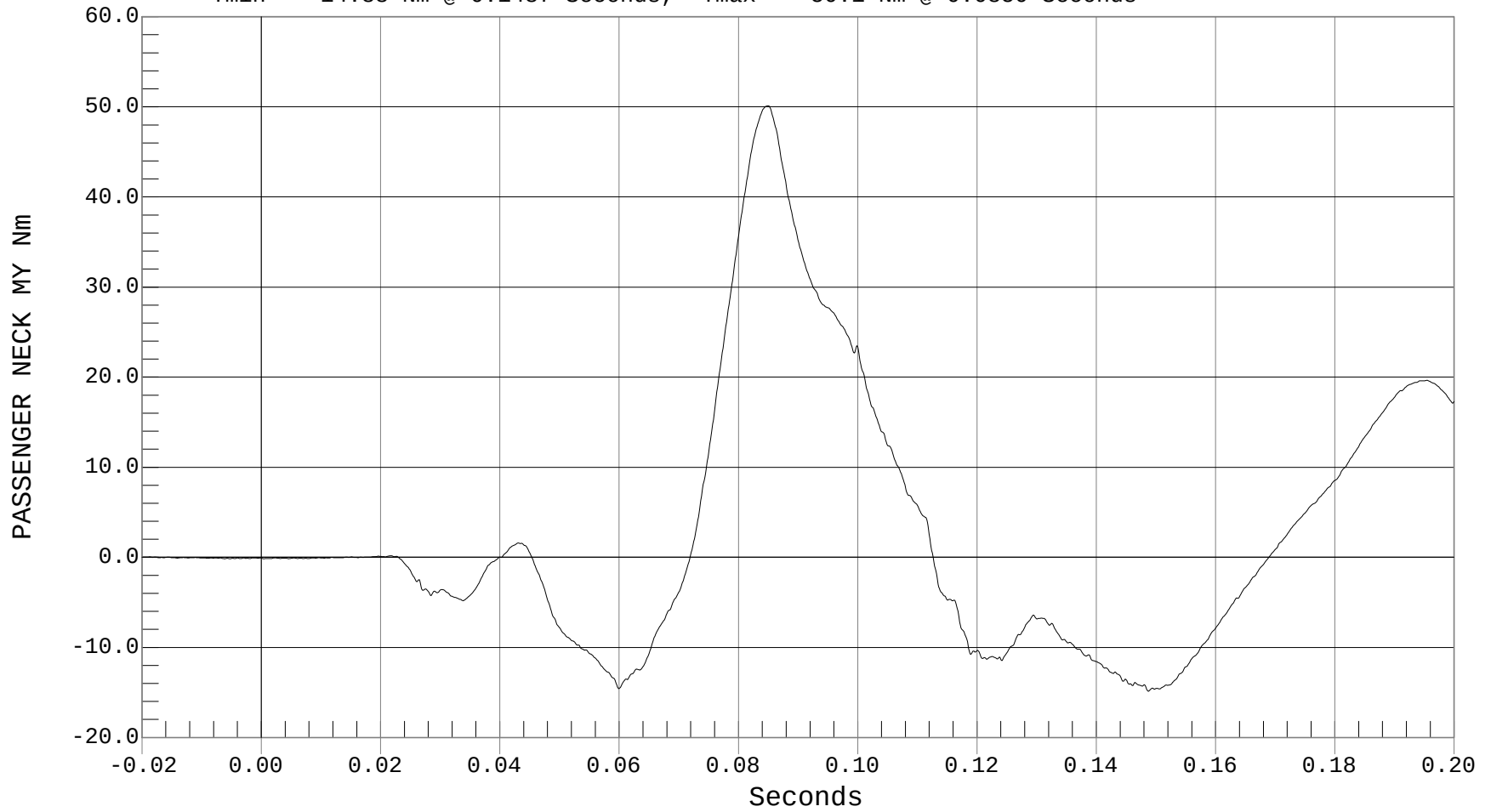
PASSENGER NECK MOMENT Y

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 600

— 1 PASSENGER NECK MY, b00095MF.M48

Ymin = -14.88 Nm @ 0.1487 Seconds, Ymax = 50.1 Nm @ 0.0850 Seconds





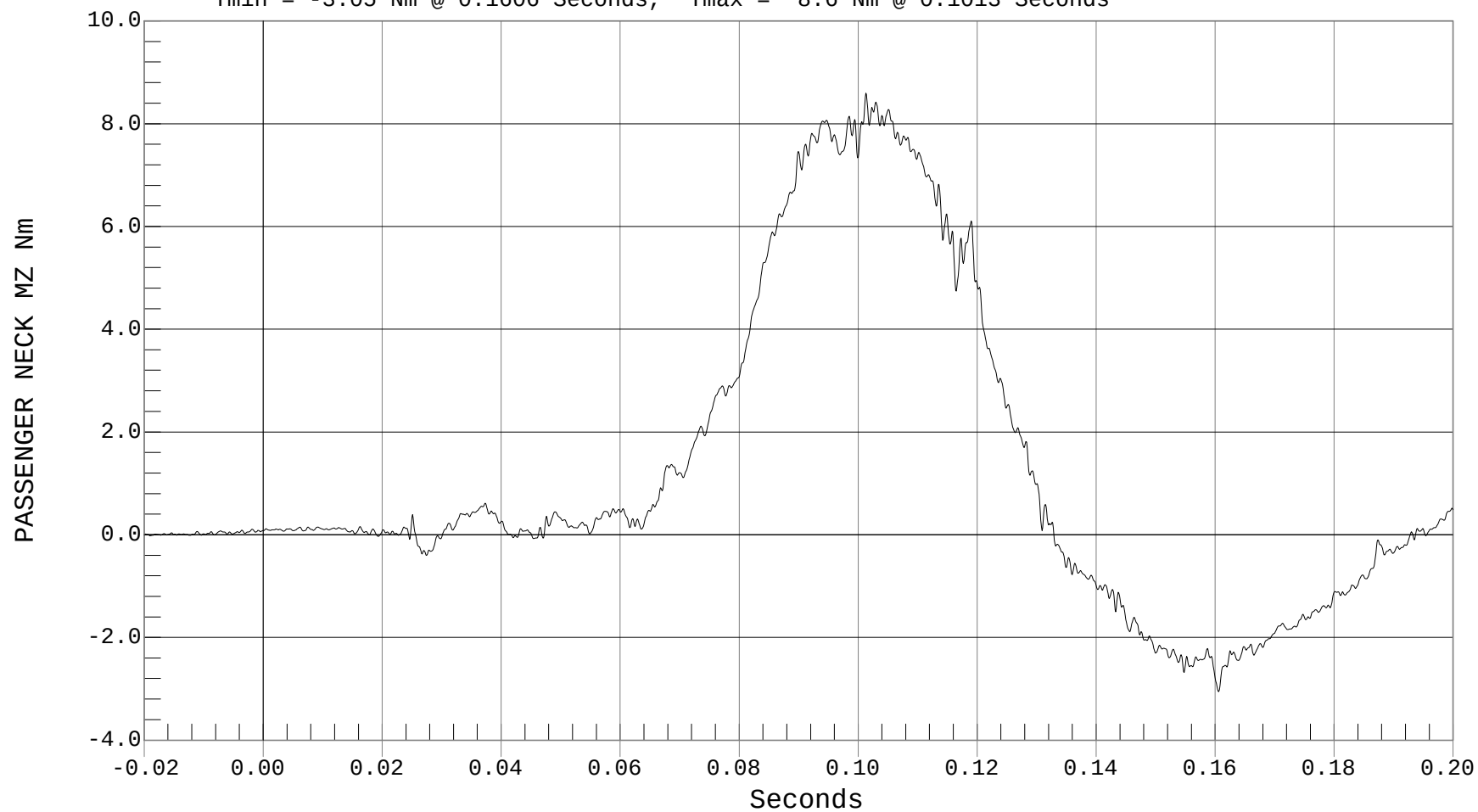
PASSENGER NECK MOMENT Z

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 600

— 1 PASSENGER NECK MZ, b00095MF.M49

Ymin = -3.05 Nm @ 0.1606 Seconds, Ymax = 8.6 Nm @ 0.1013 Seconds





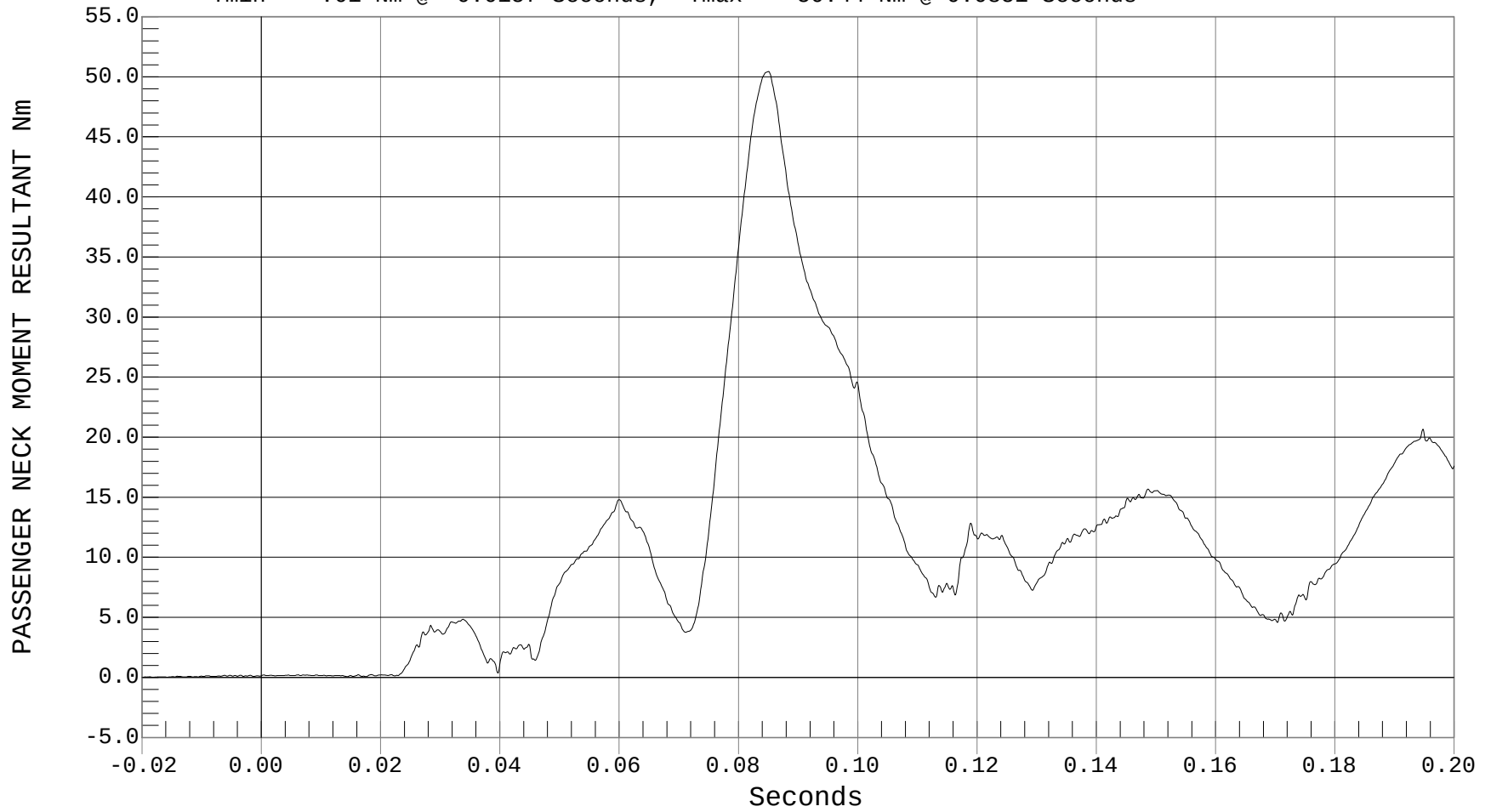
PASSENGER NECK MOMENT RESULTANT

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 600

— 1 PASSENGER NECK MOMENT RESULTANT, b00095MV.M47

Ymin = .01 Nm @ -0.0157 Seconds, Ymax = 50.44 Nm @ 0.0851 Seconds





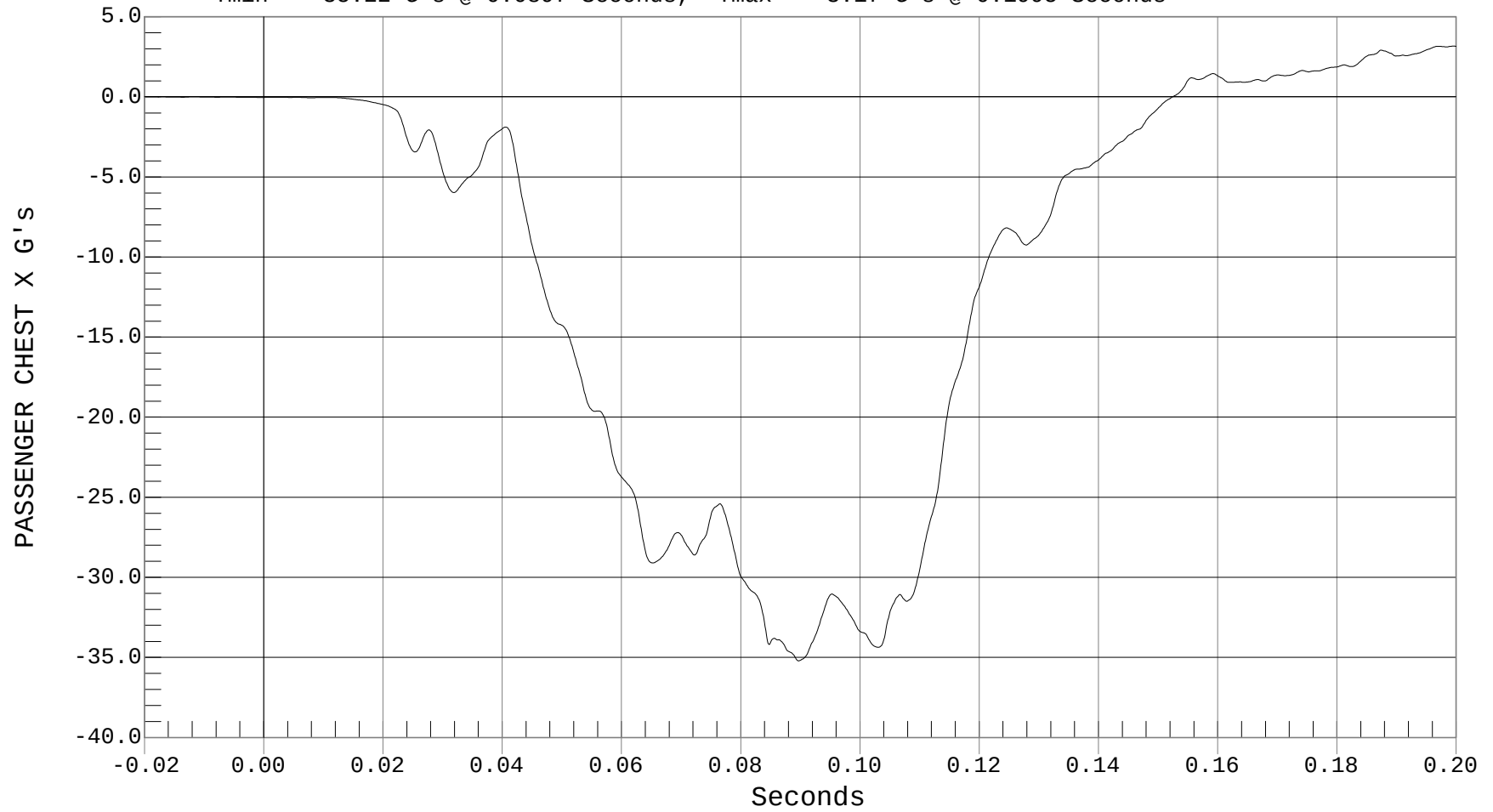
PASSENGER CHEST X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 PASSENGER CHEST X, b00095AF.A22

Ymin = -35.22 G's @ 0.0897 Seconds, Ymax = 3.17 G's @ 0.1995 Seconds





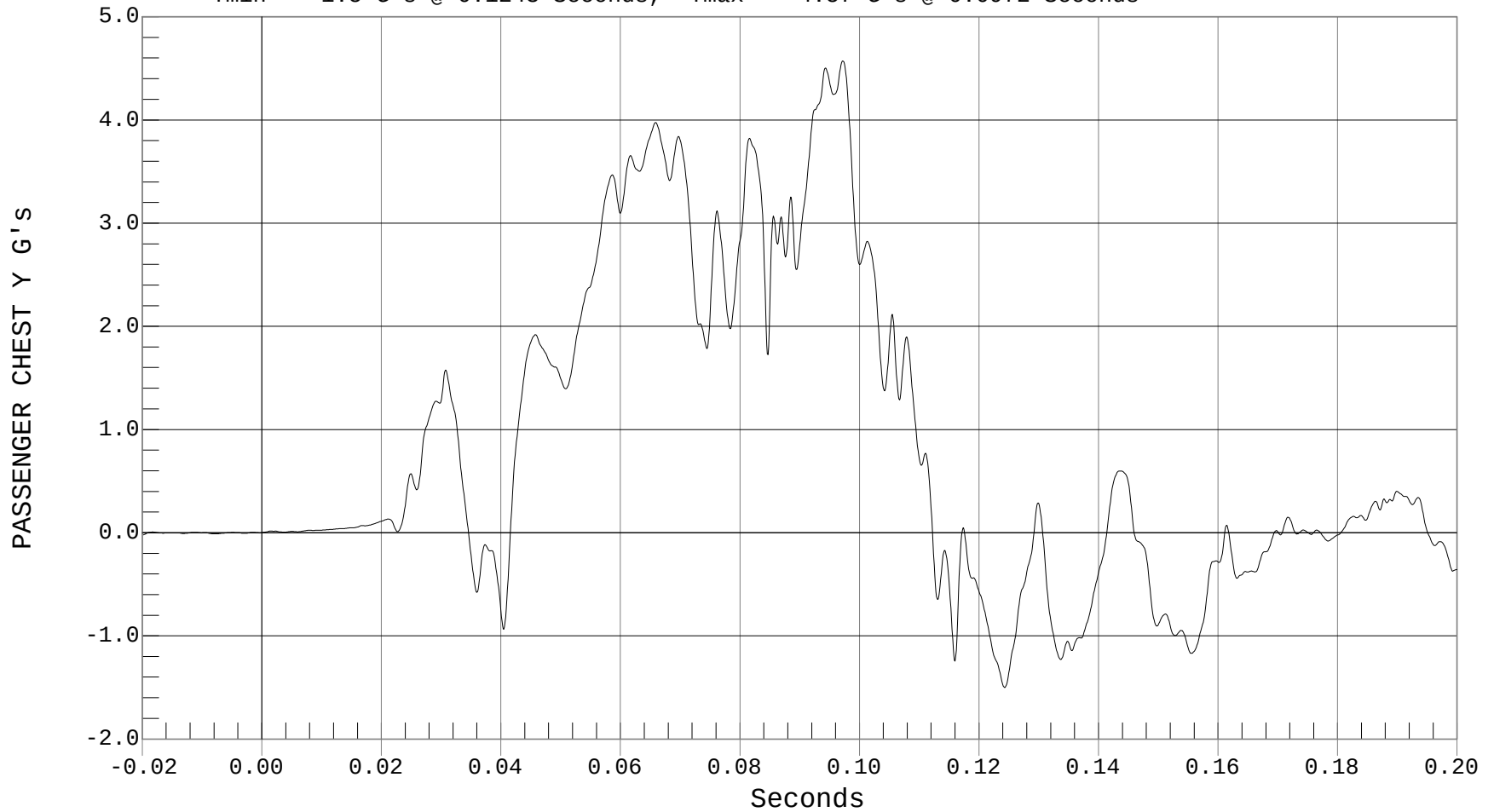
PASSENGER CHEST Y ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 PASSENGER CHEST Y, b00095AF.A23

Ymin = -1.5 G's @ 0.1243 Seconds, Ymax = 4.57 G's @ 0.0972 Seconds





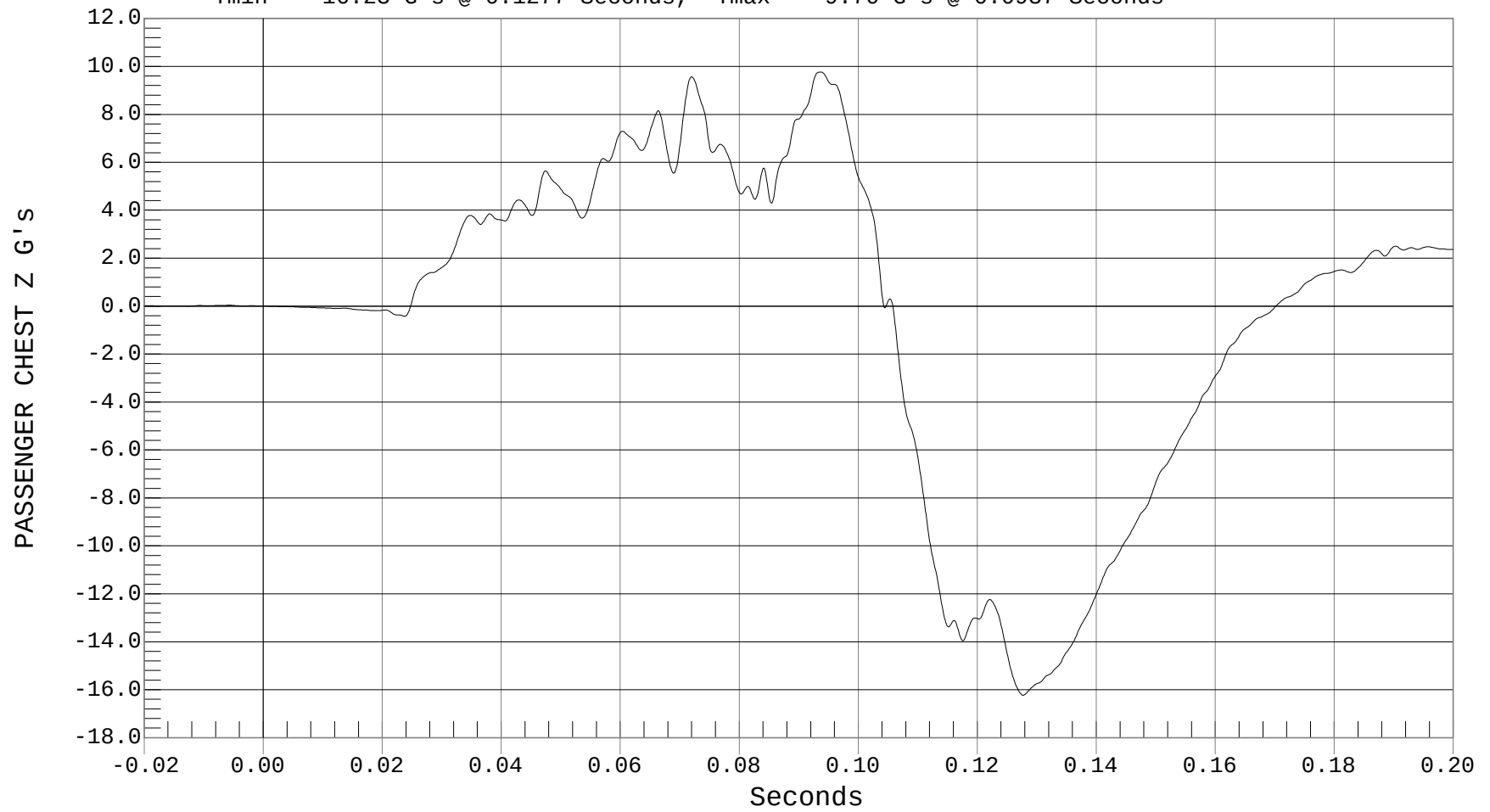
PASSENGER CHEST Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 PASSENGER CHEST Z, b00095AF.A24

Ymin = -16.23 G's @ 0.1277 Seconds, Ymax = 9.76 G's @ 0.0937 Seconds





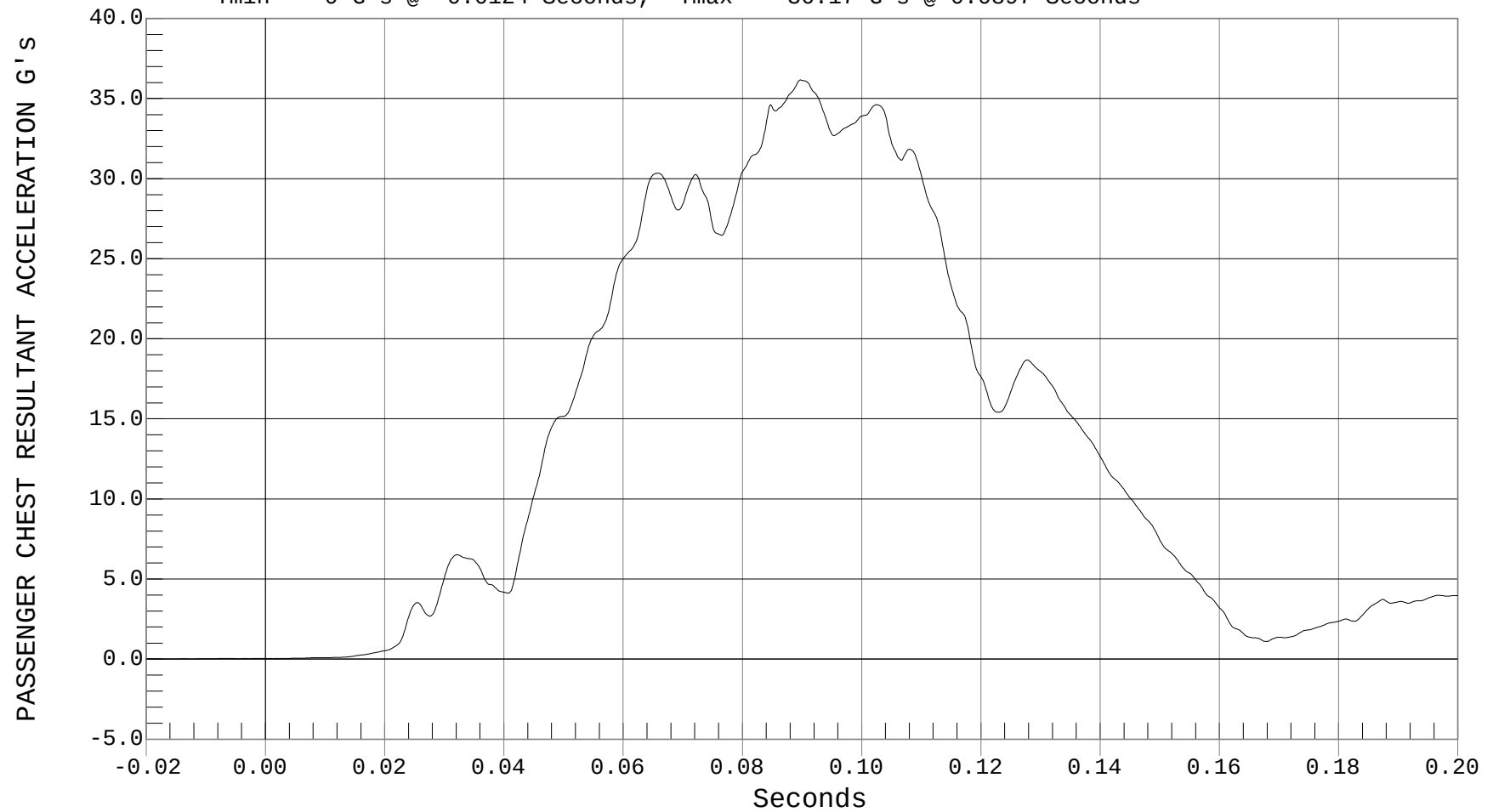
PASSENGER CHEST RESULTANT ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 PASSENGER CHEST RESULTANT ACCELERATION, b00095AV.A22

Ymin = 0 G's @ -0.0124 Seconds, Ymax = 36.17 G's @ 0.0897 Seconds





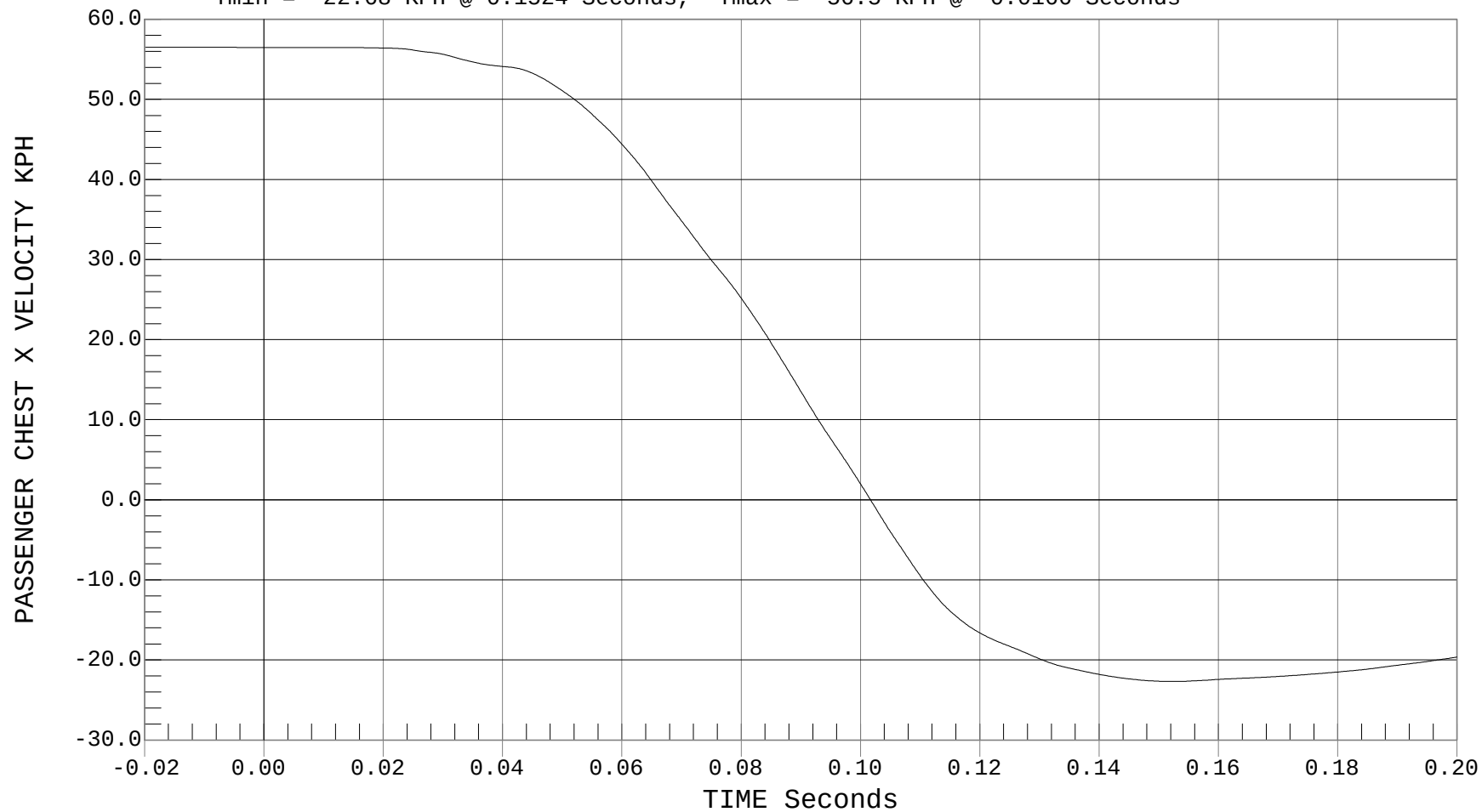
PASSENGER CHEST X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 PASSENGER CHEST X VELOCITY, b00095AI.V22

Ymin = -22.68 KPH @ 0.1524 Seconds, Ymax = 56.5 KPH @ -0.0166 Seconds





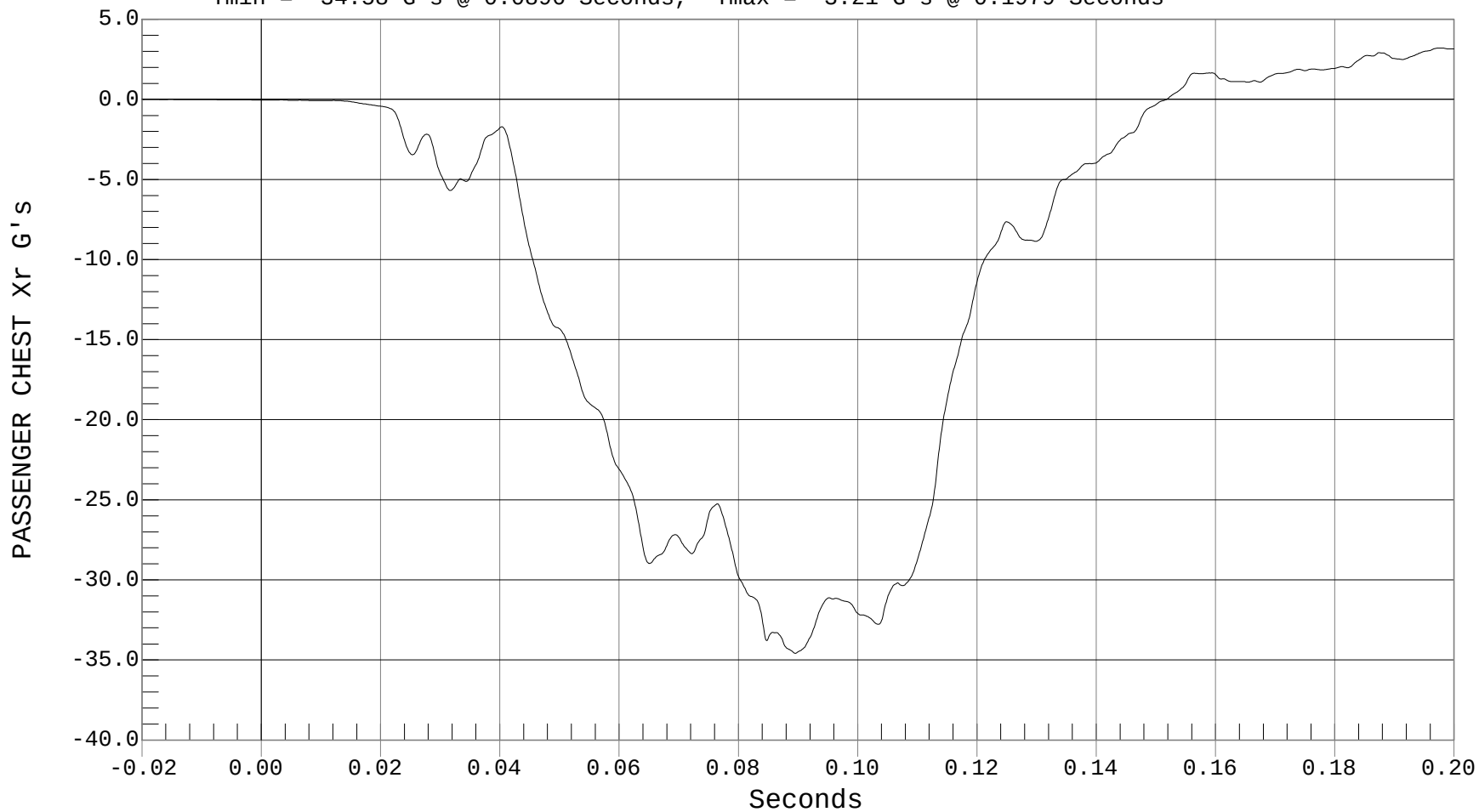
PASSENGER CHEST REDUNDANT X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 PASSENGER CHEST Xr, b00095AF.A50

Ymin = -34.58 G's @ 0.0896 Seconds, Ymax = 3.21 G's @ 0.1979 Seconds





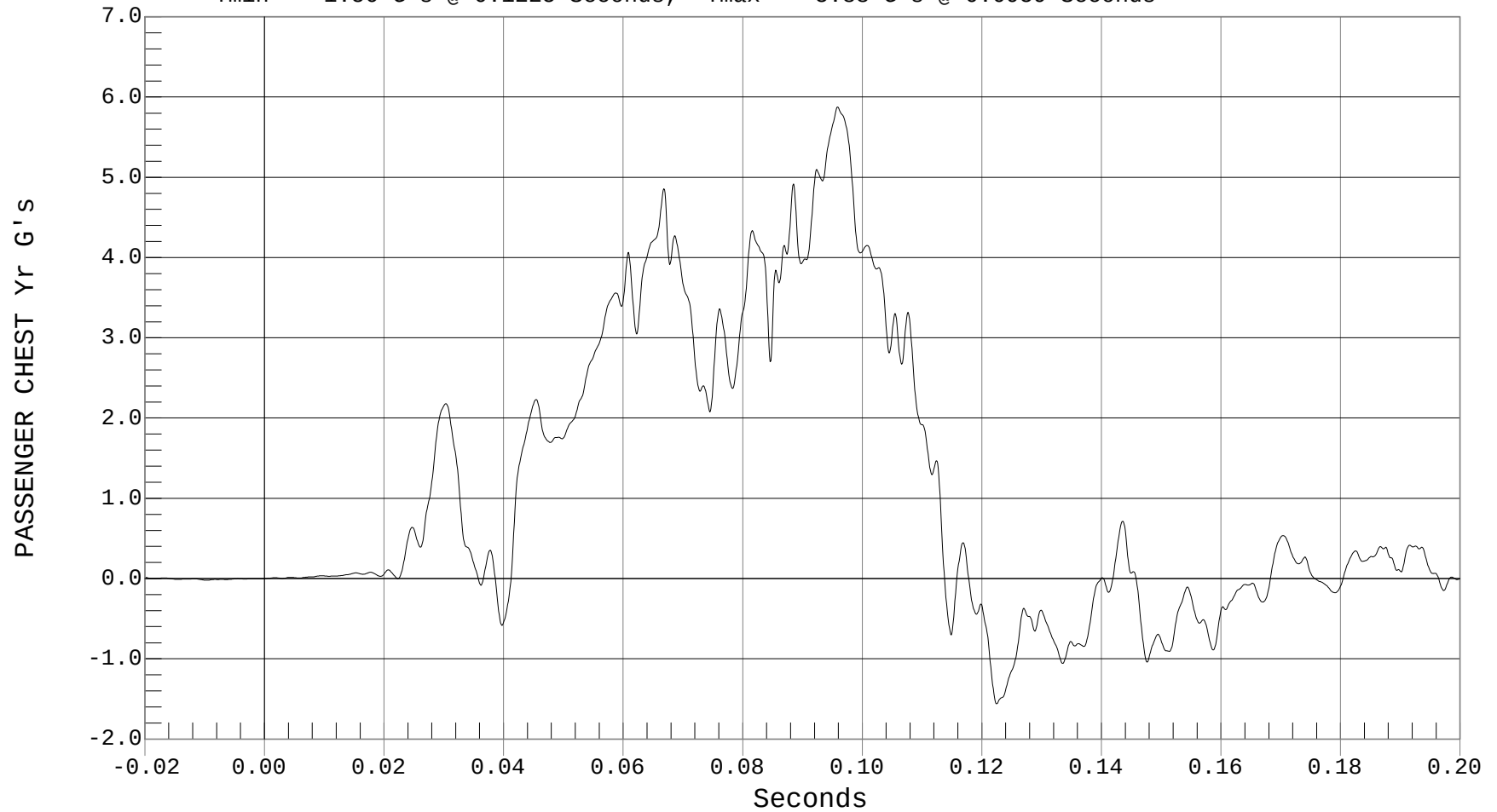
PASSENGER CHEST REDUNDANT Y ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 PASSENGER CHEST Yr, b00095AF.A51

Ymin = -1.56 G's @ 0.1225 Seconds, Ymax = 5.88 G's @ 0.0959 Seconds





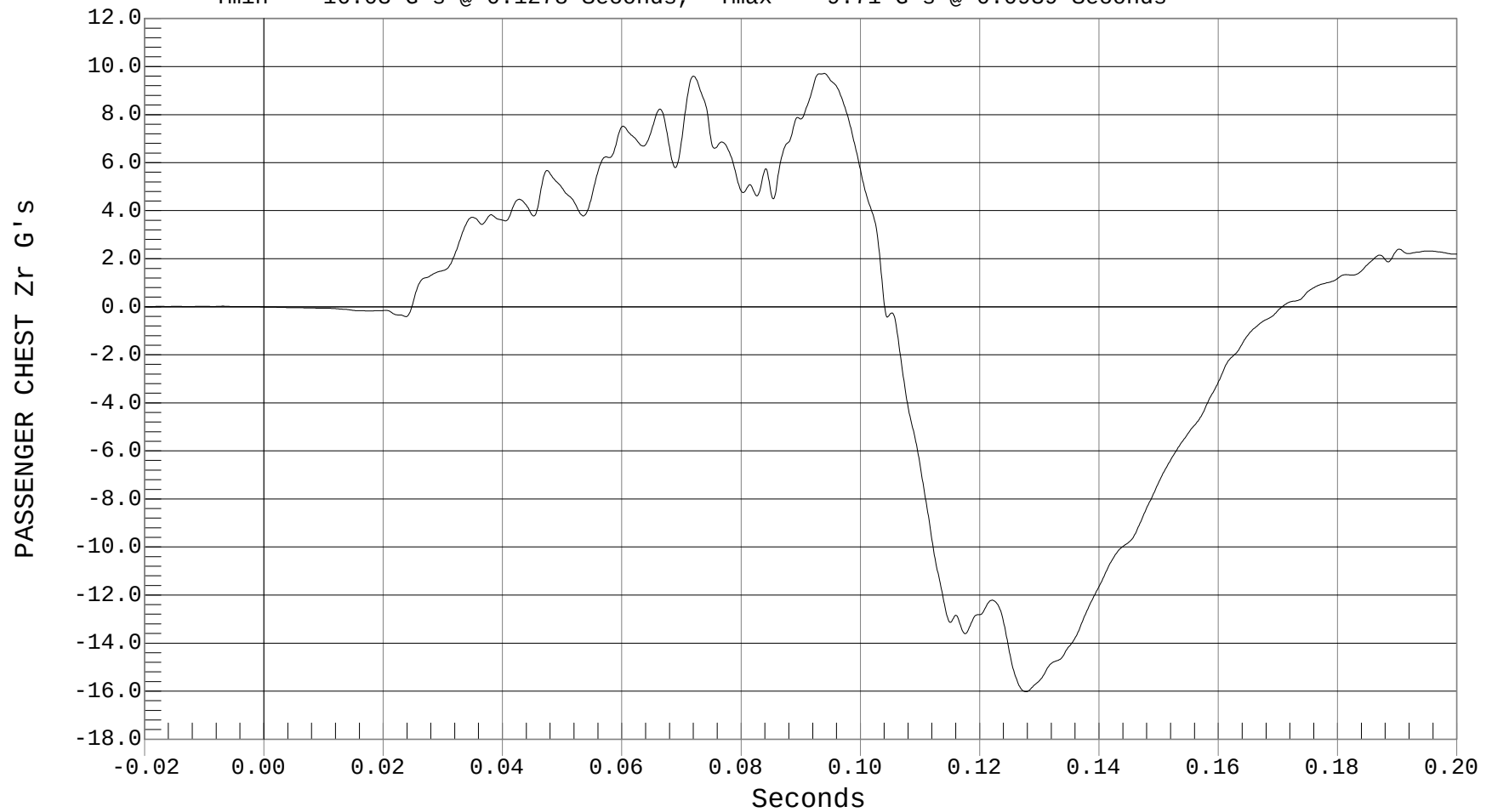
PASSENGER CHEST REDUNDANT Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 PASSENGER CHEST Zr, b00095AF.A52

Ymin = -16.03 G's @ 0.1278 Seconds, Ymax = 9.71 G's @ 0.0939 Seconds





PASSENGER CHEST REDUNDANT RESULTANT ACCELERATION

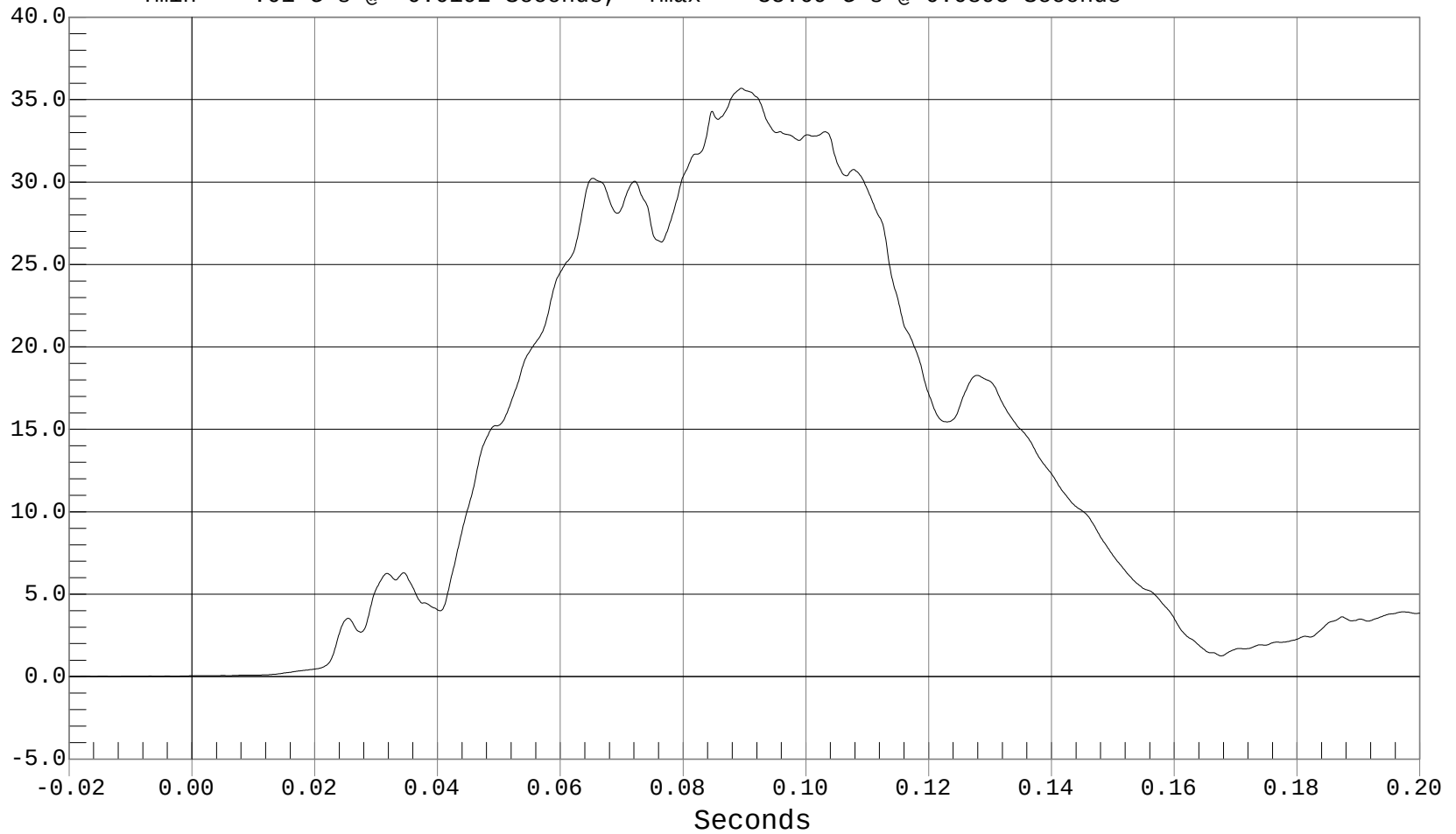
Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 PASSENGER CHEST REDUNDANT RESULTANT ACCELERATION, b00095AV.A50

PASSENGER CHEST REDUNDANT RESULTANT ACCELERATION G

Ymin = .01 G's @ -0.0192 Seconds, Ymax = 35.69 G's @ 0.0895 Seconds





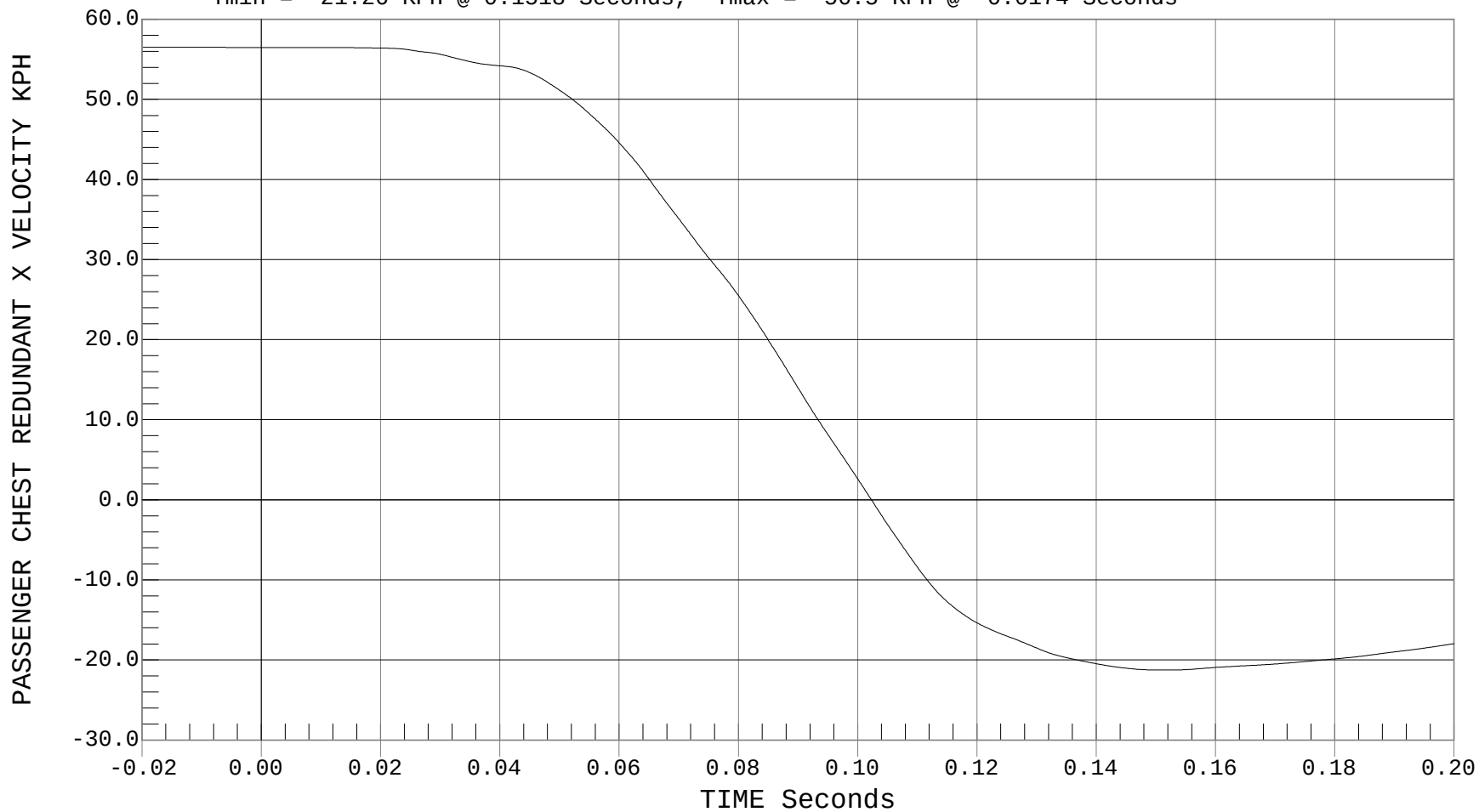
PASSENGER CHEST REDUNDANT X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 PASSENGER CHEST REDUNDANT X VELOCITY, b00095AI.V50

Ymin = -21.26 KPH @ 0.1518 Seconds, Ymax = 56.5 KPH @ -0.0174 Seconds





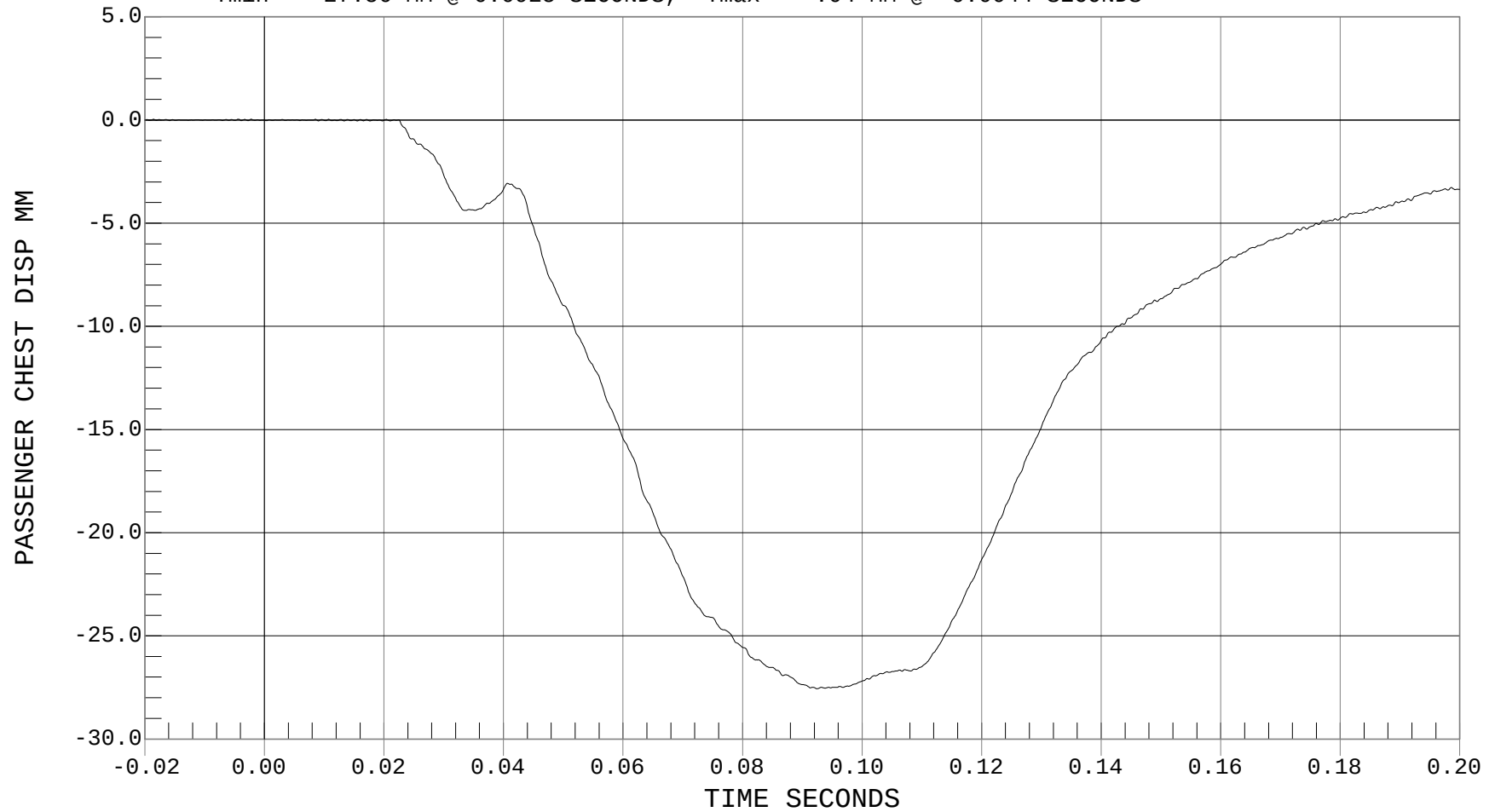
PASSENGER CHEST COMPRESSION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 600

— 1 PASSENGER CHEST DISP, b00095DF.D25

Ymin = -27.56 MM @ 0.0925 SECONDS, Ymax = .04 MM @ -0.0044 SECONDS





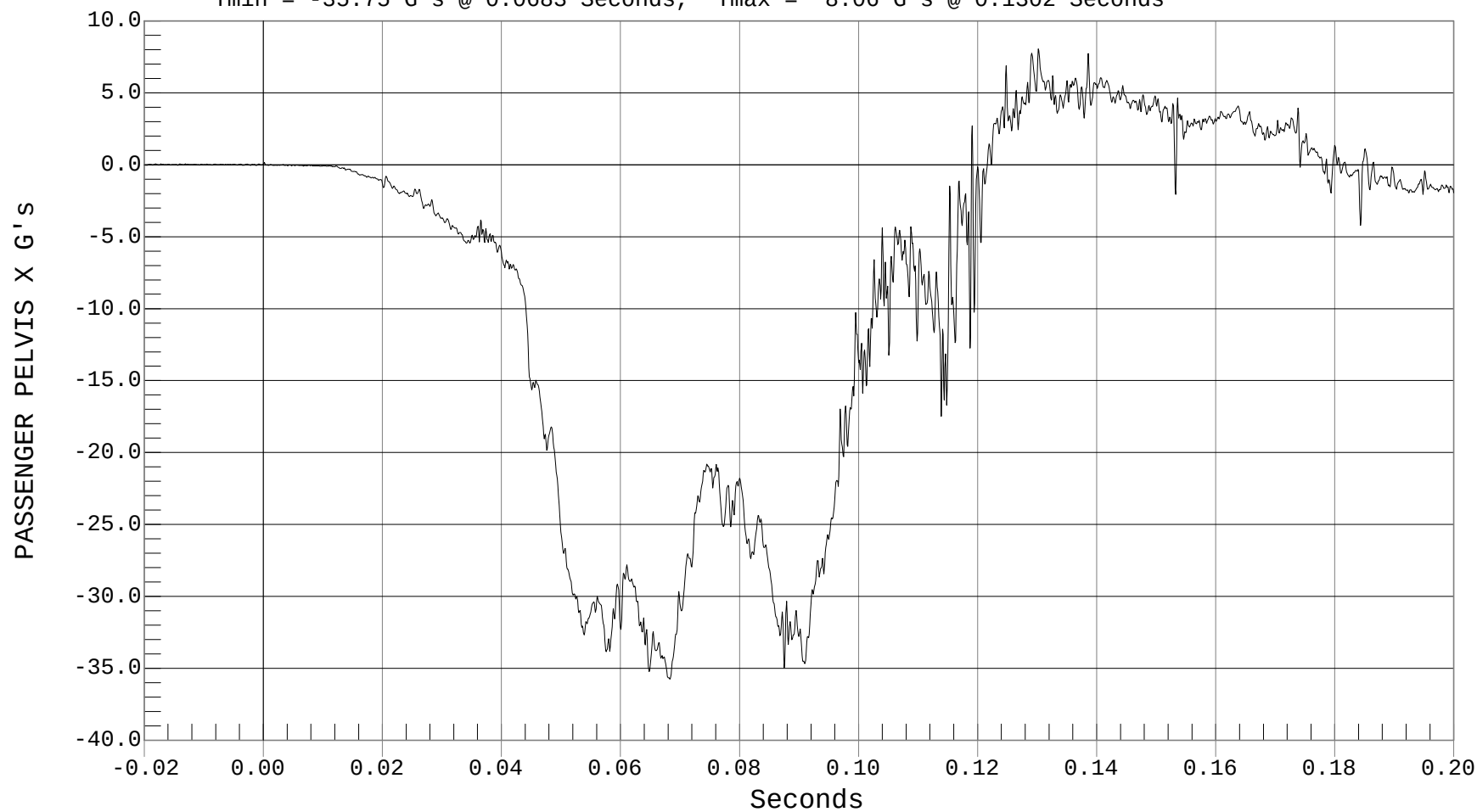
PASSENGER PELVIS X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 1000

— 1 PASSENGER PELVIS X, b00095AT.A26

Ymin = -35.75 G's @ 0.0683 Seconds, Ymax = 8.06 G's @ 0.1302 Seconds





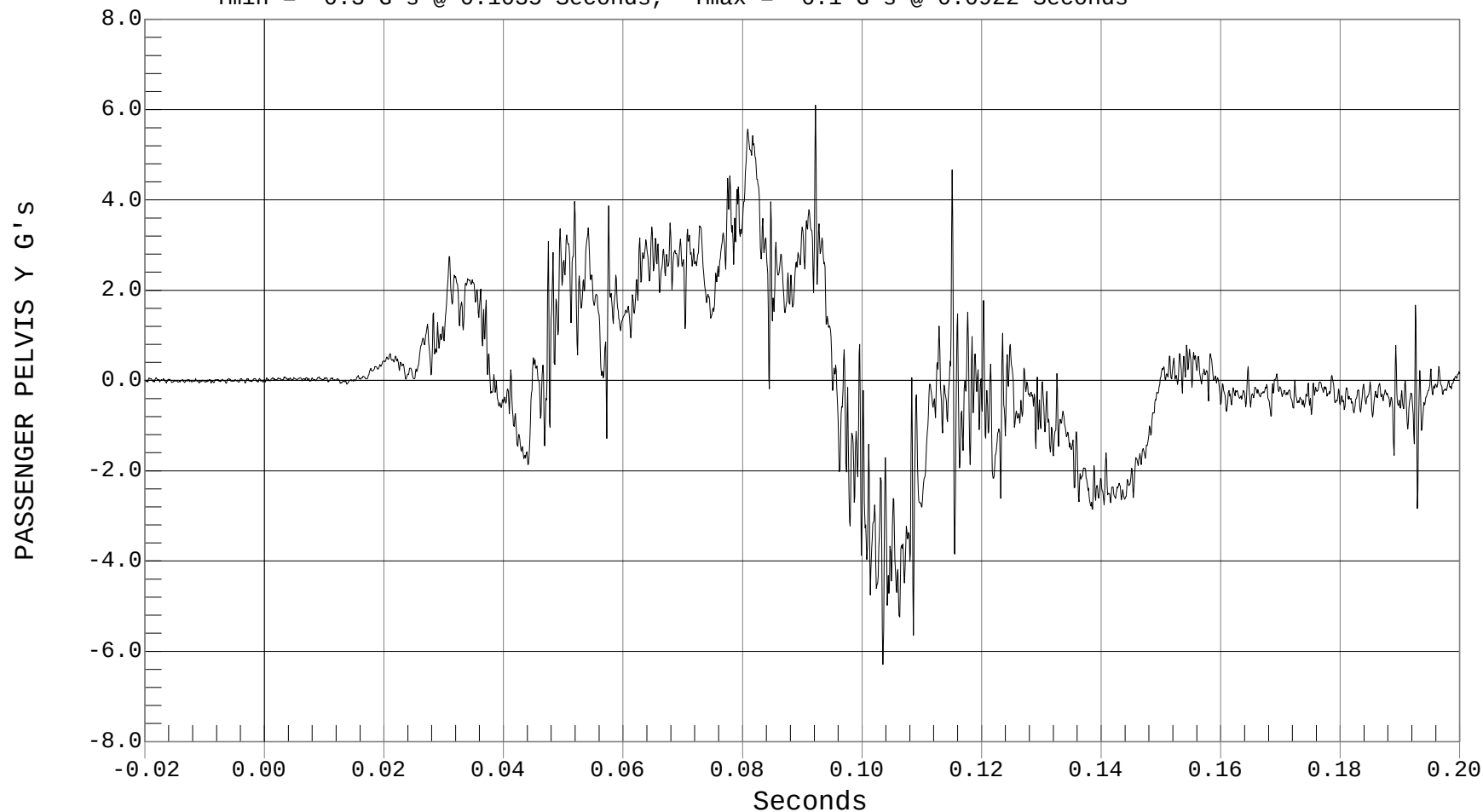
PASSENGER PELVIS Y ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 1000

— 1 PASSENGER PELVIS Y, b00095AT.A27

Ymin = -6.3 G's @ 0.1035 Seconds, Ymax = 6.1 G's @ 0.0922 Seconds





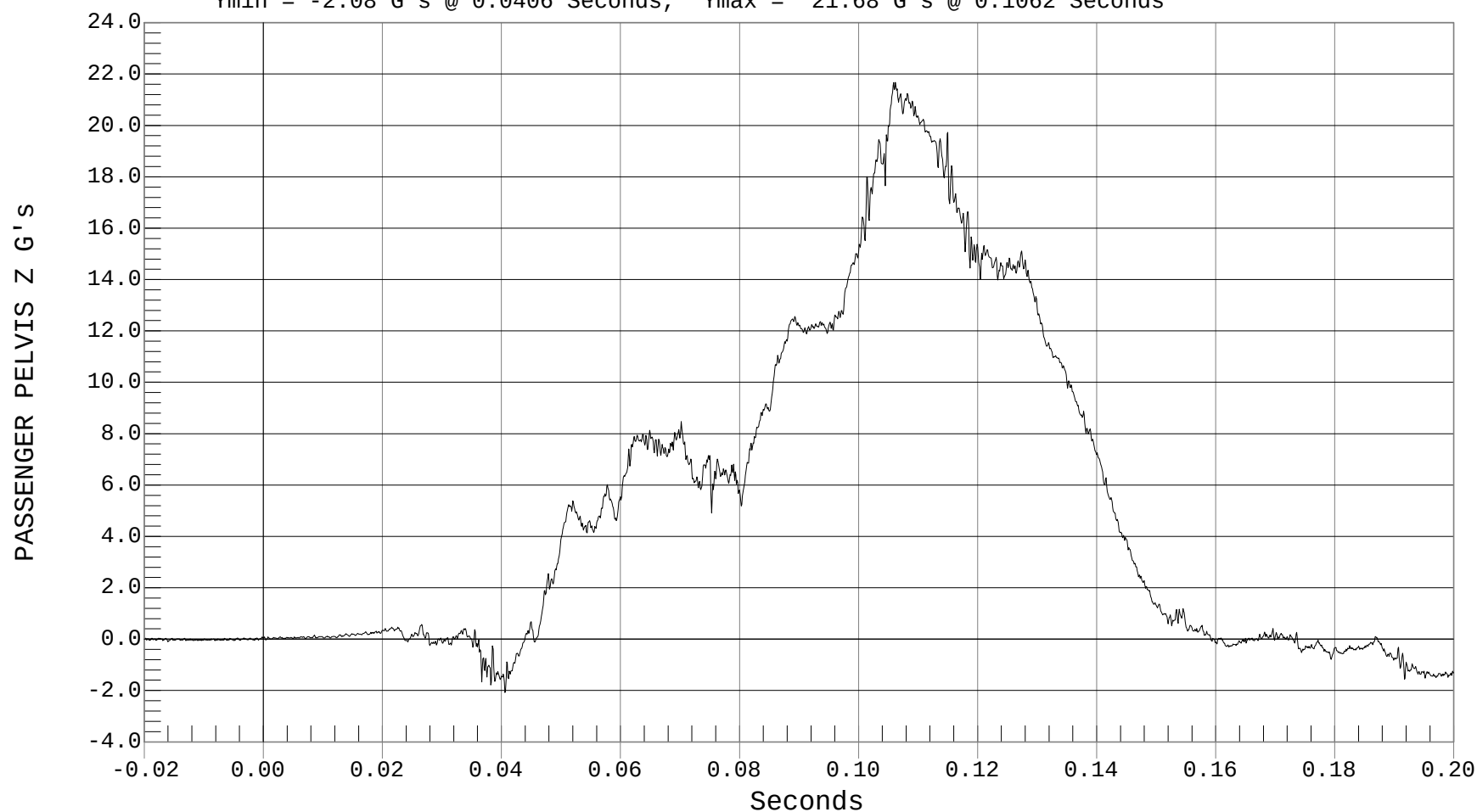
PASSENGER PELVIS Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 1000

— 1 PASSENGER PELVIS Z, b00095AT.A28

Ymin = -2.08 G's @ 0.0406 Seconds, Ymax = 21.68 G's @ 0.1062 Seconds





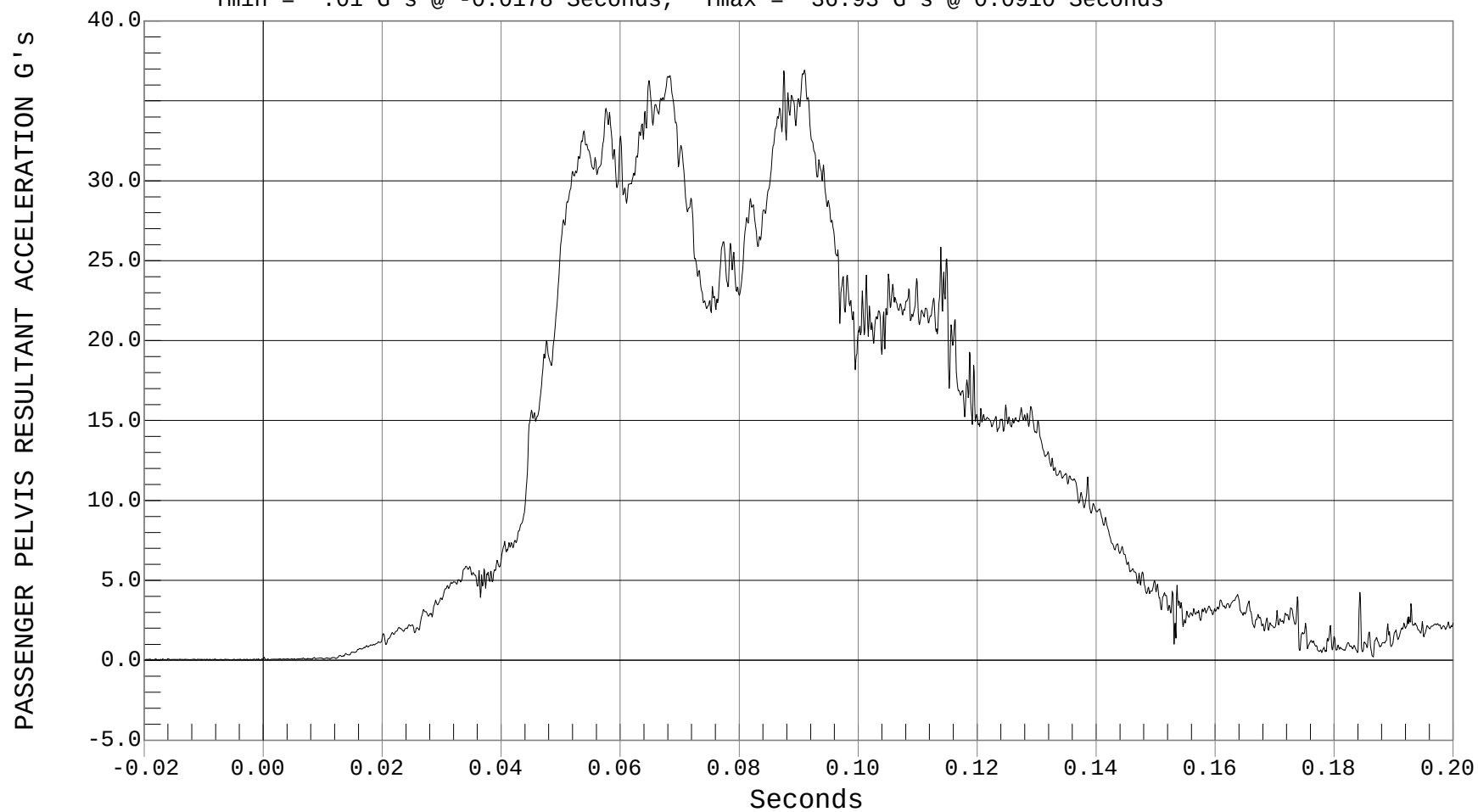
PASSENGER PELVIS RESULTANT ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 1000

— 1 PASSENGER PELVIS RESULTANT ACCELERATION, b00095AV.A26

Ymin = .01 G's @ -0.0178 Seconds, Ymax = 36.93 G's @ 0.0910 Seconds





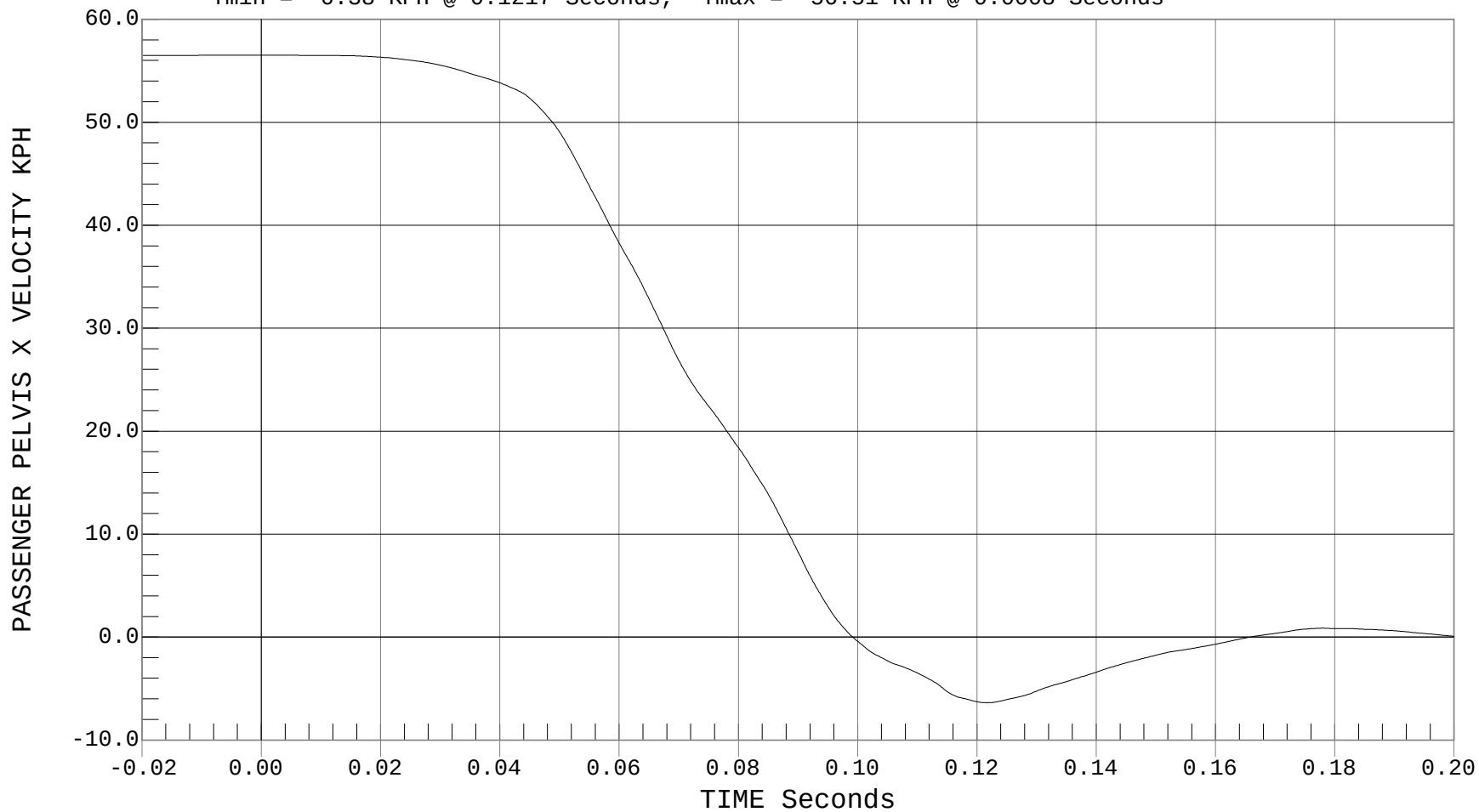
PASSENGER PELVIS X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 PASSENGER PELVIS X VELOCITY, b00095AI.V26

Ymin = -6.38 KPH @ 0.1217 Seconds, Ymax = 56.51 KPH @ 0.0008 Seconds





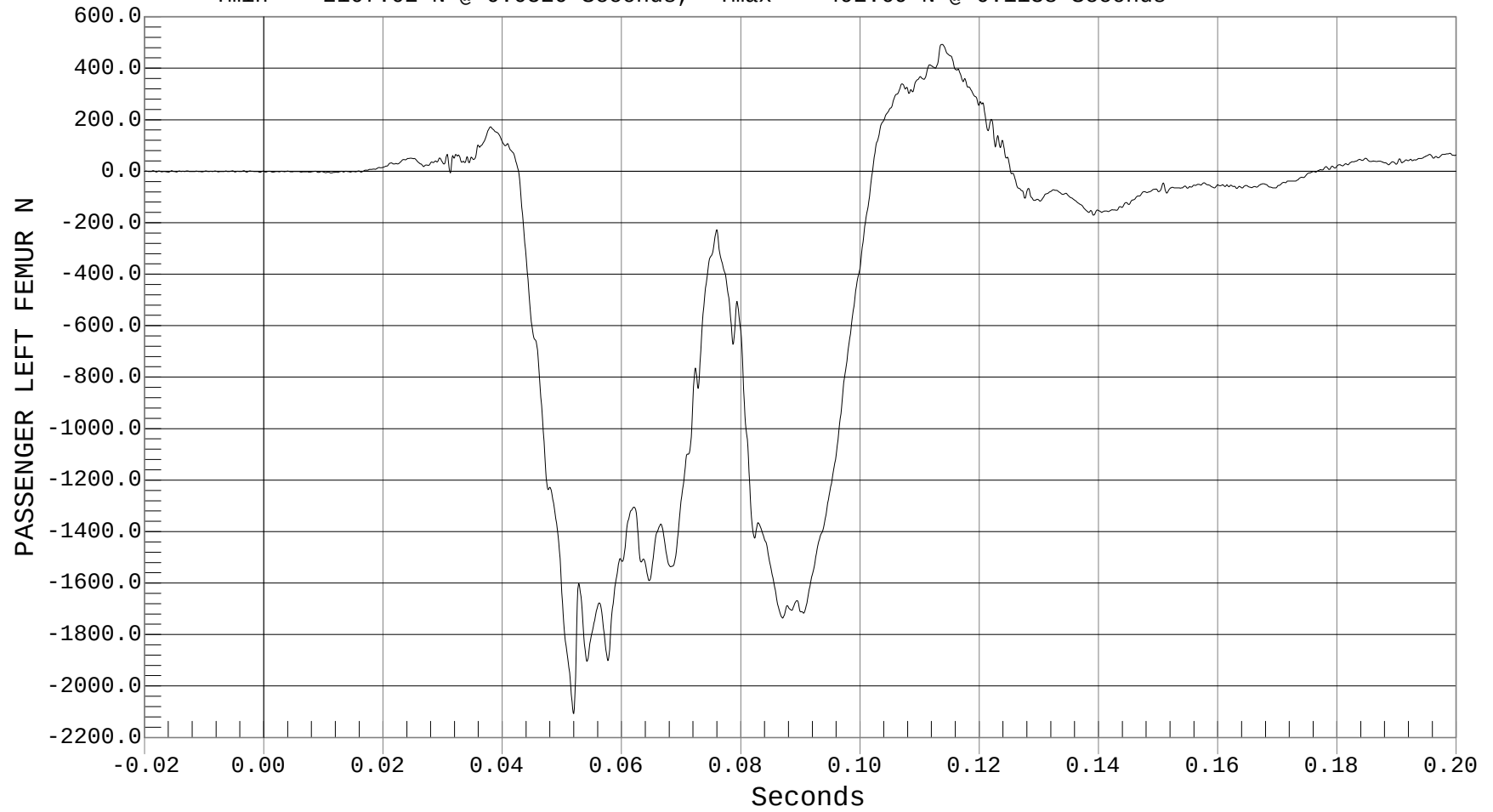
PASSENGER LEFT FEMUR FORCE

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 600

— 1 PASSENGER LEFT FEMUR, b00095FF.F30

Ymin = -2107.02 N @ 0.0520 Seconds, Ymax = 492.69 N @ 0.1138 Seconds





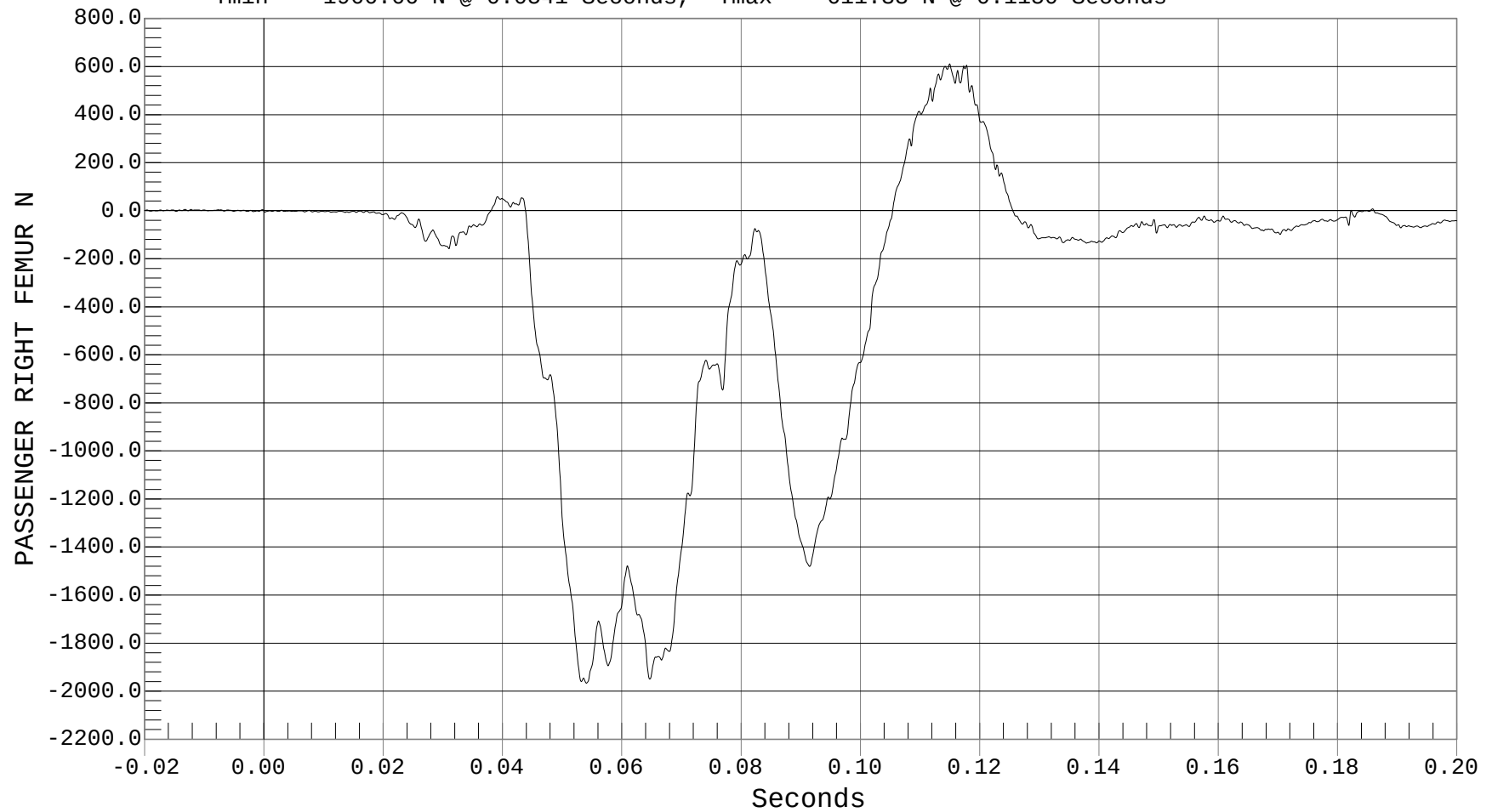
PASSENGER RIGHT FEMUR FORCE

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 600

— 1 PASSENGER RIGHT FEMUR, b00095FF.F29

Ymin = -1966.66 N @ 0.0541 Seconds, Ymax = 611.33 N @ 0.1150 Seconds





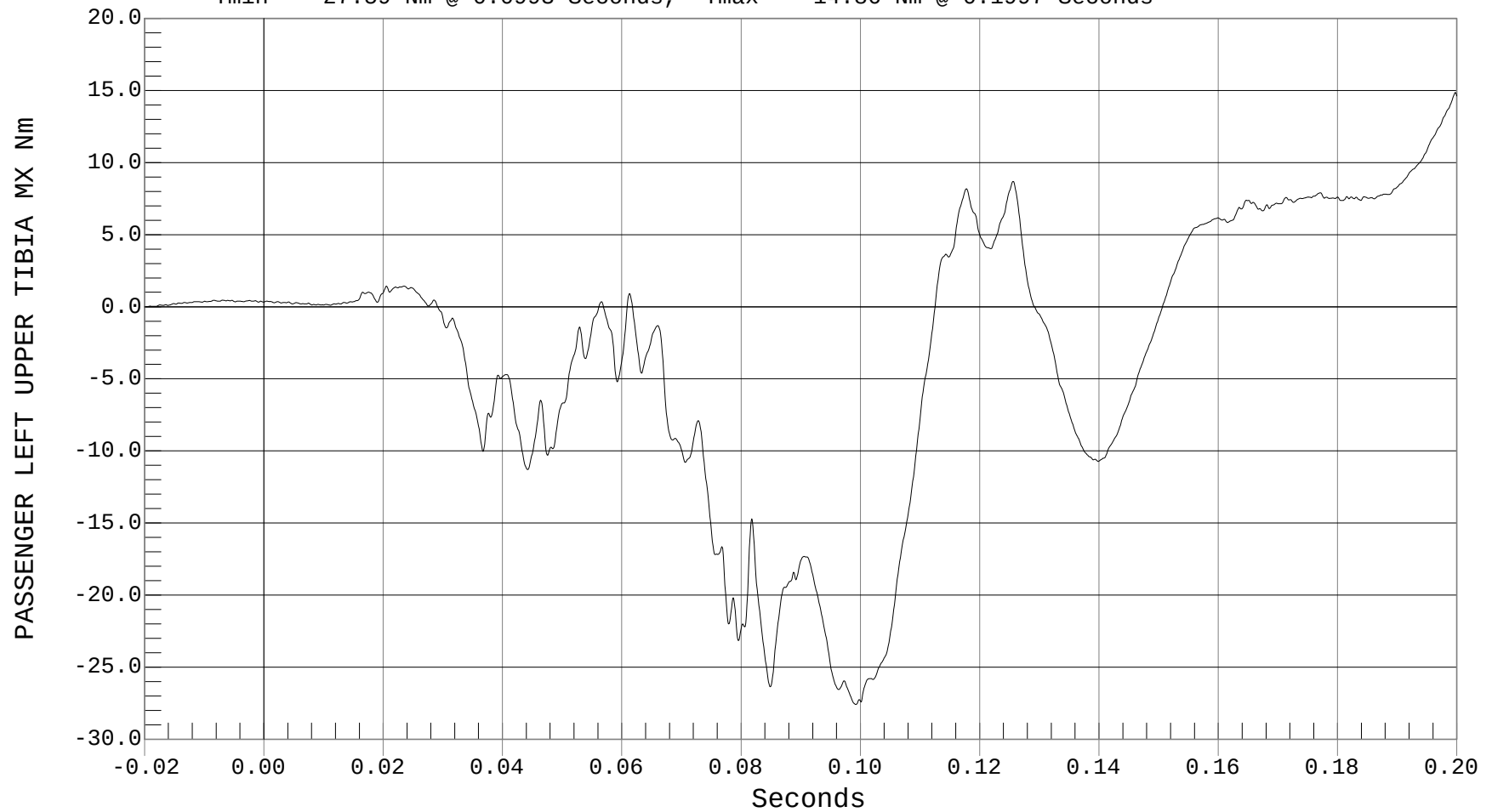
PASSENGER LEFT UPPER TIBIA MOMENT X

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 600

— 1 PASSENGER LEFT UPPER TIBIA MX, b00095MF.M87

Ymin = -27.59 Nm @ 0.0993 Seconds, Ymax = 14.86 Nm @ 0.1997 Seconds





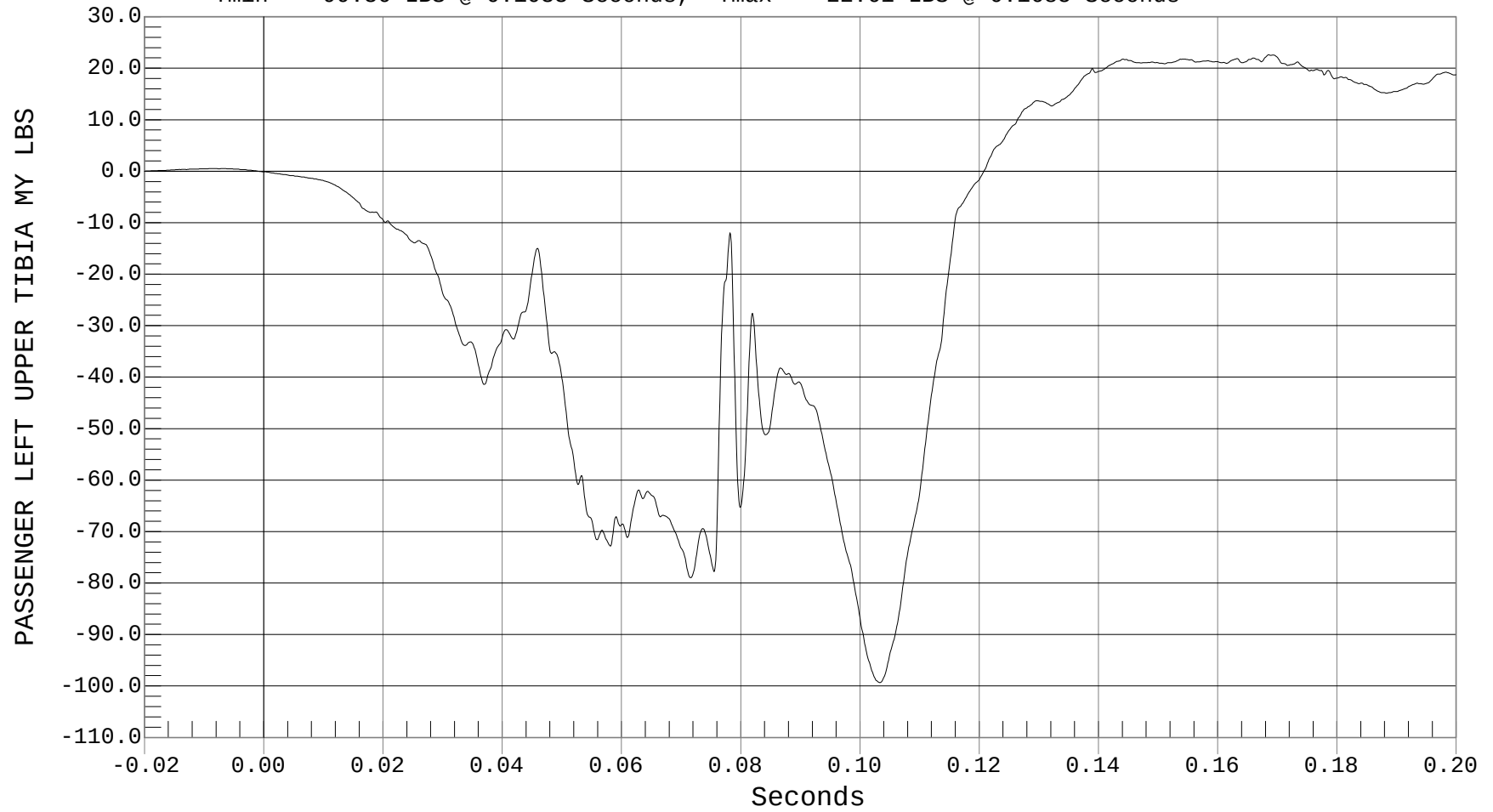
PASSENGER LEFT UPPER TIBIA MOMENT Y

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 600

— 1 PASSENGER LEFT UPPER TIBIA MY, b00095MF.M88

Ymin = -99.36 LBS @ 0.1033 Seconds, Ymax = 22.61 LBS @ 0.1685 Seconds





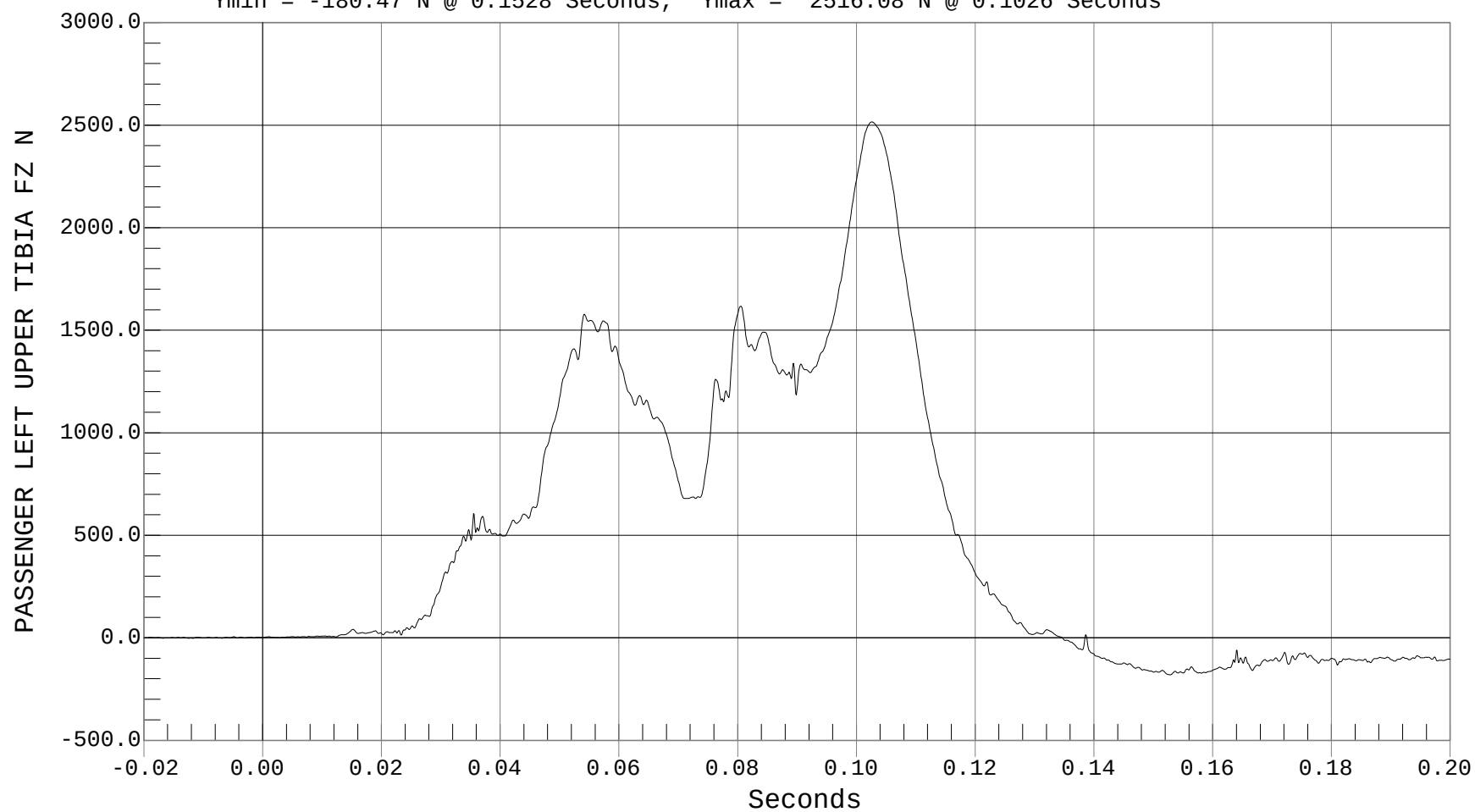
PASSENGER LEFT UPPER TIBIA FORCE Z

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 600

— 1 PASSENGER LEFT UPPER TIBIA FZ, b00095FF.F89

Ymin = -180.47 N @ 0.1528 Seconds, Ymax = 2516.08 N @ 0.1026 Seconds





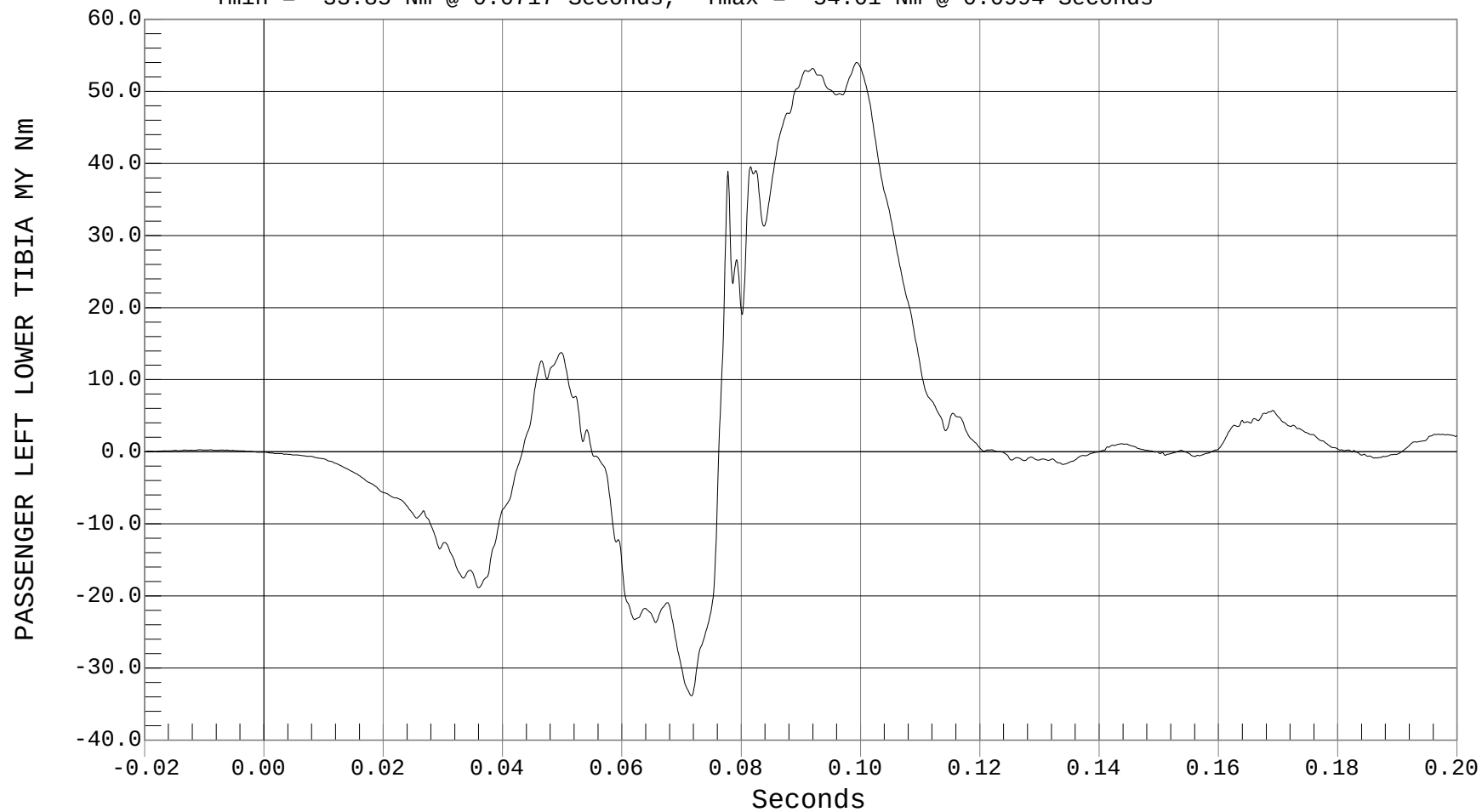
PASSENGER LEFT LOWER TIBIA MOMENT Y

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 600

— 1 PASSENGER LEFT LOWER TIBIA MY, b00095MF.M91

Ymin = -33.85 Nm @ 0.0717 Seconds, Ymax = 54.01 Nm @ 0.0994 Seconds





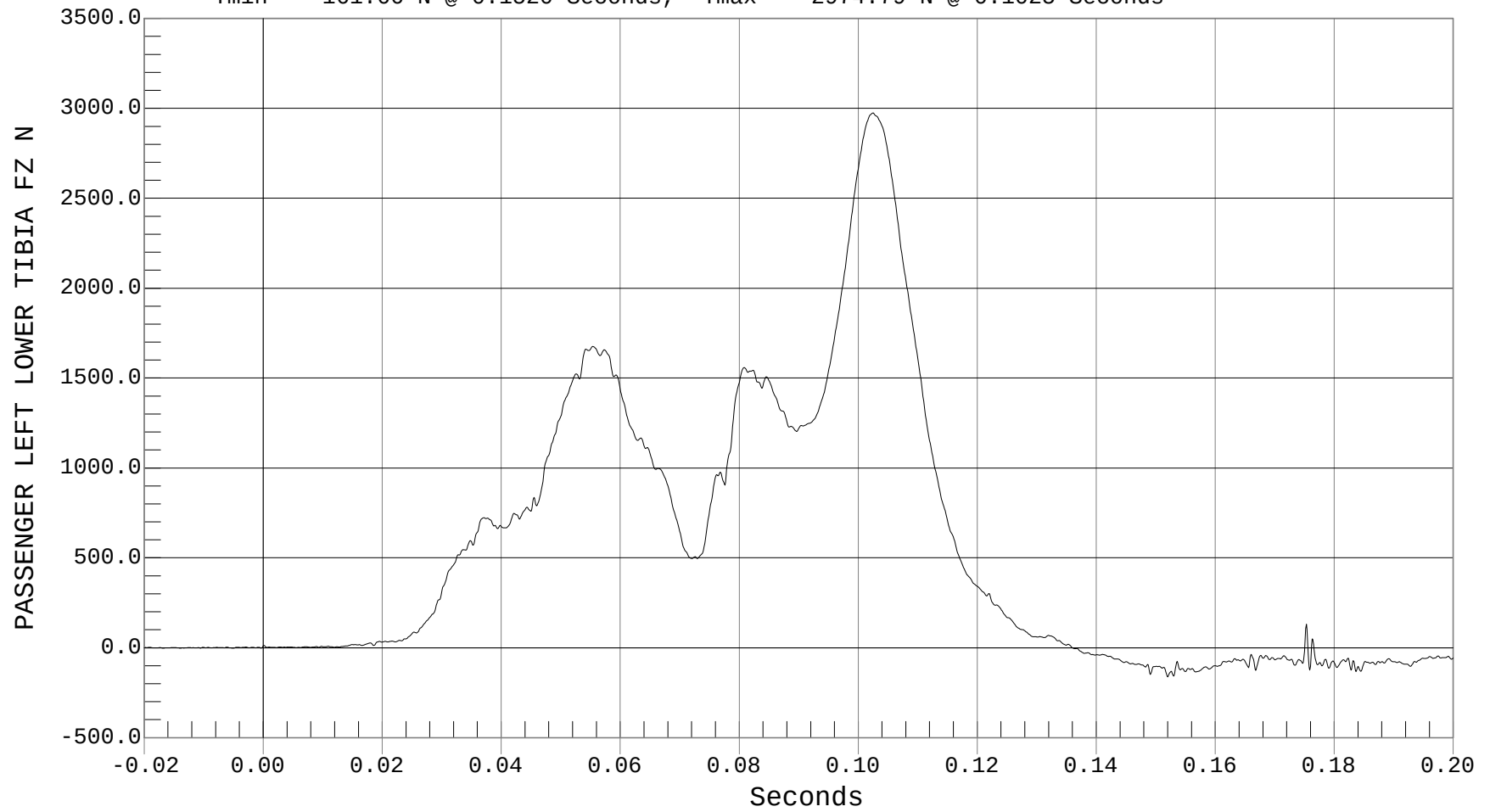
PASSENGER LEFT LOWER TIBIA FORCE Z

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 600

— 1 PASSENGER LEFT LOWER TIBIA FZ, b00095FF.F92

Ymin = -161.66 N @ 0.1520 Seconds, Ymax = 2974.79 N @ 0.1025 Seconds





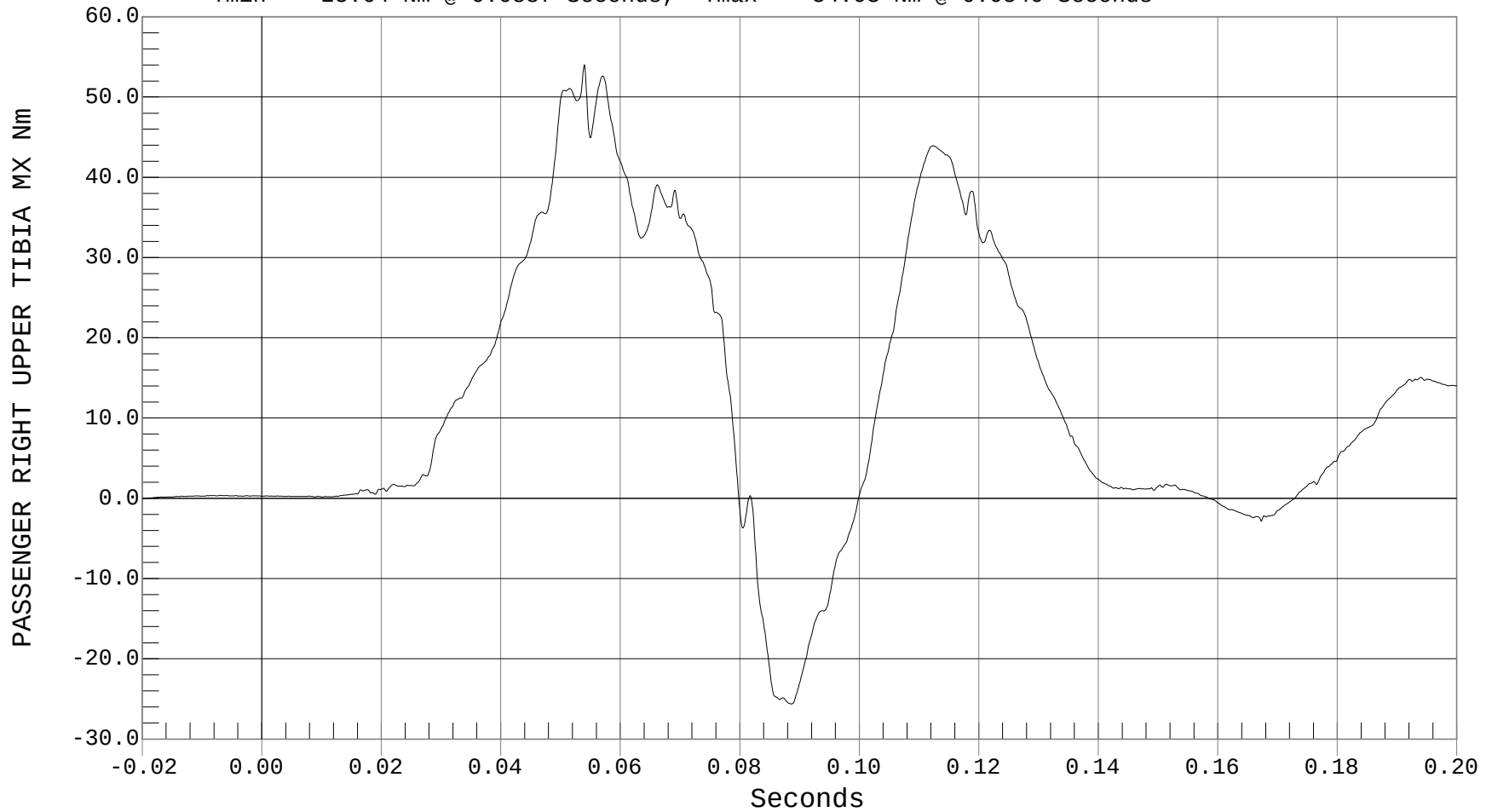
PASSENGER RIGHT UPPER TIBIA MOMENT X

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 600

— 1 PASSENGER RIGHT UPPER TIBIA MX, b00095MF.M81

Ymin = -25.64 Nm @ 0.0887 Seconds, Ymax = 54.03 Nm @ 0.0540 Seconds





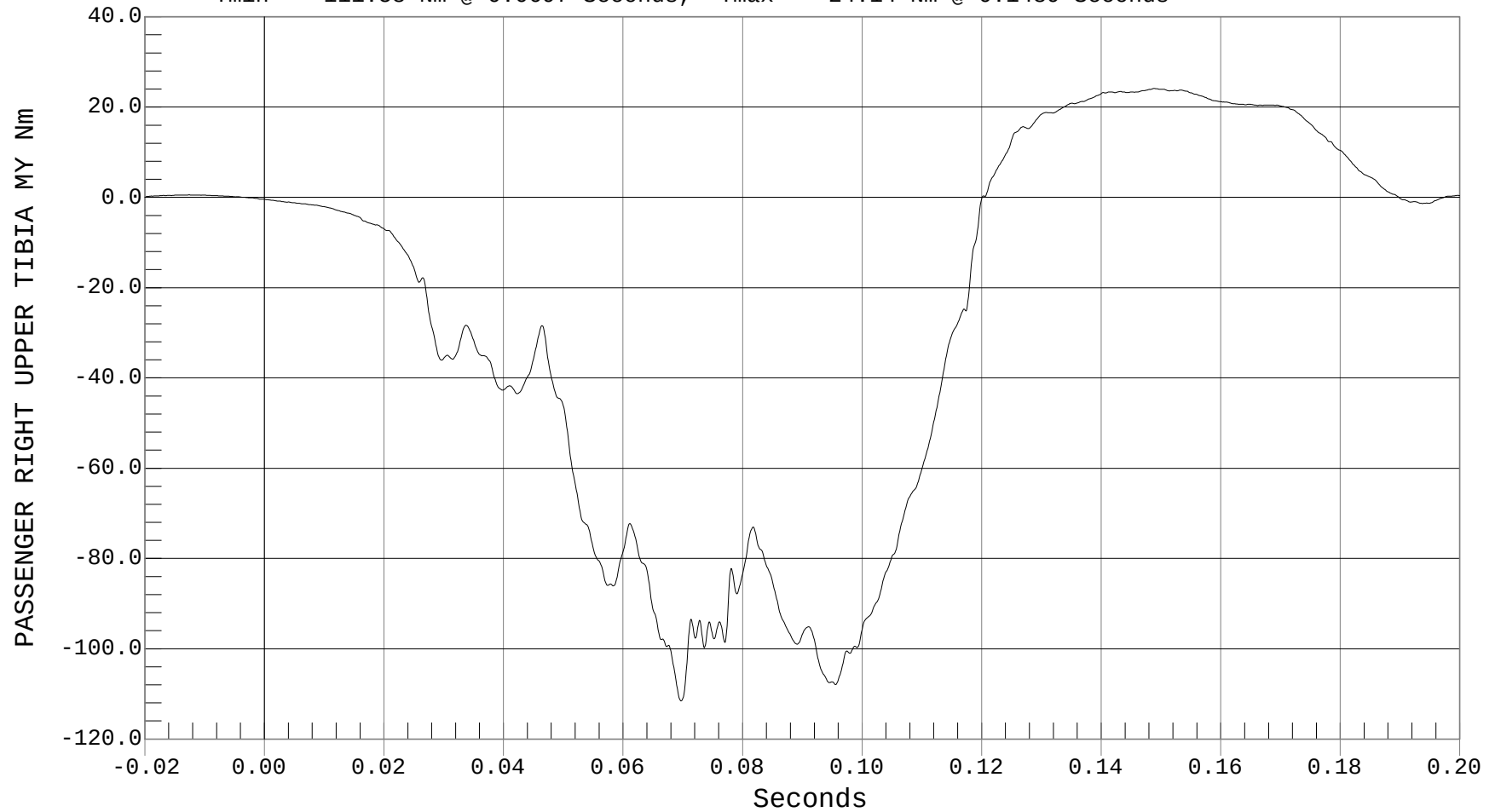
PASSENGER RIGHT UPPER TIBIA MOMENT Y

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 600

— 1 PASSENGER RIGHT UPPER TIBIA MY, b00095MF.M82

Ymin = -111.58 Nm @ 0.0697 Seconds, Ymax = 24.14 Nm @ 0.1489 Seconds





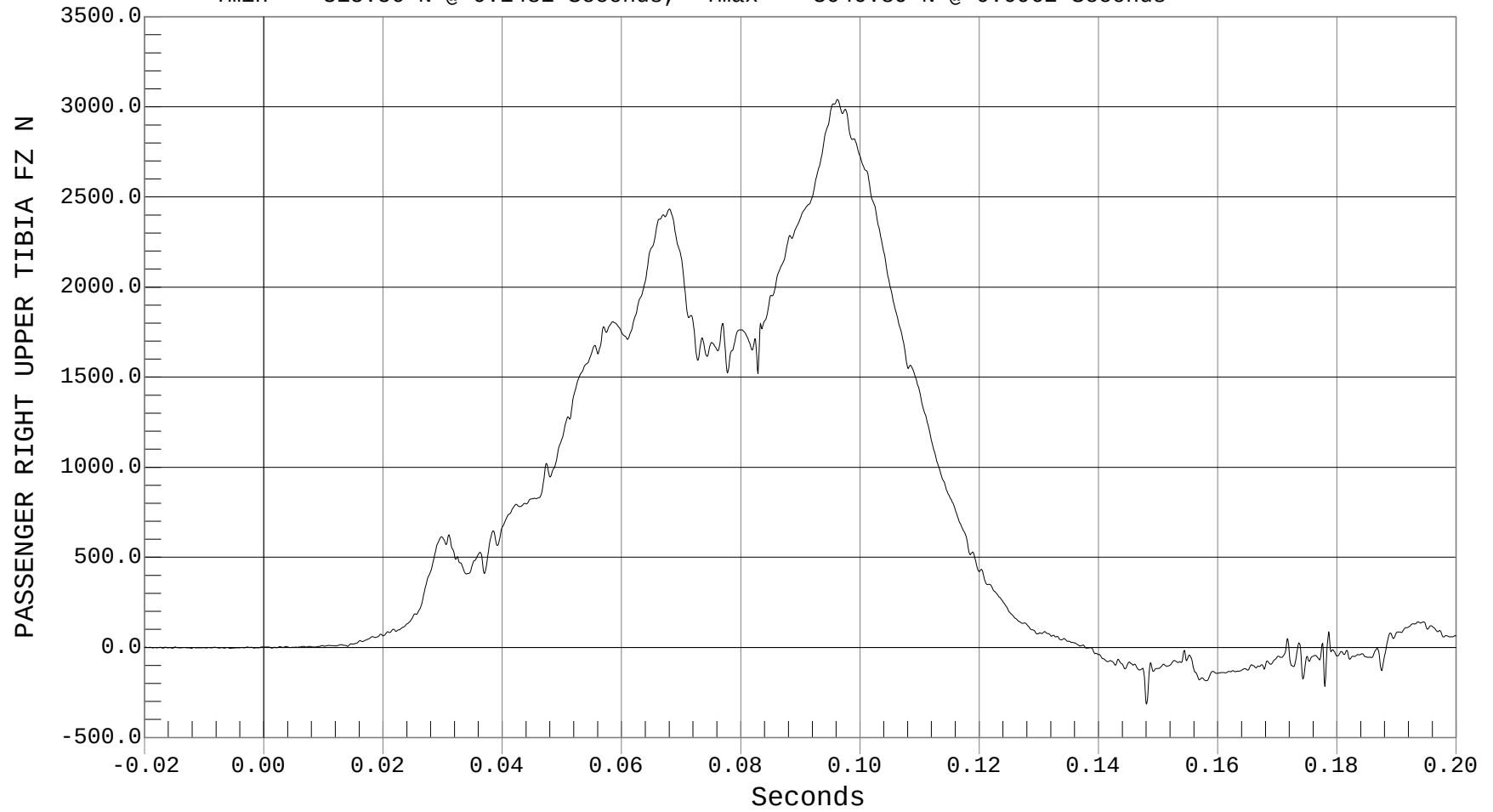
PASSENGER RIGHT UPPER TIBIA FORCE Z

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 600

— 1 PASSENGER RIGHT UPPER TIBIA FZ, b00095FF.F83

Ymin = -315.56 N @ 0.1481 Seconds, Ymax = 3040.89 N @ 0.0962 Seconds





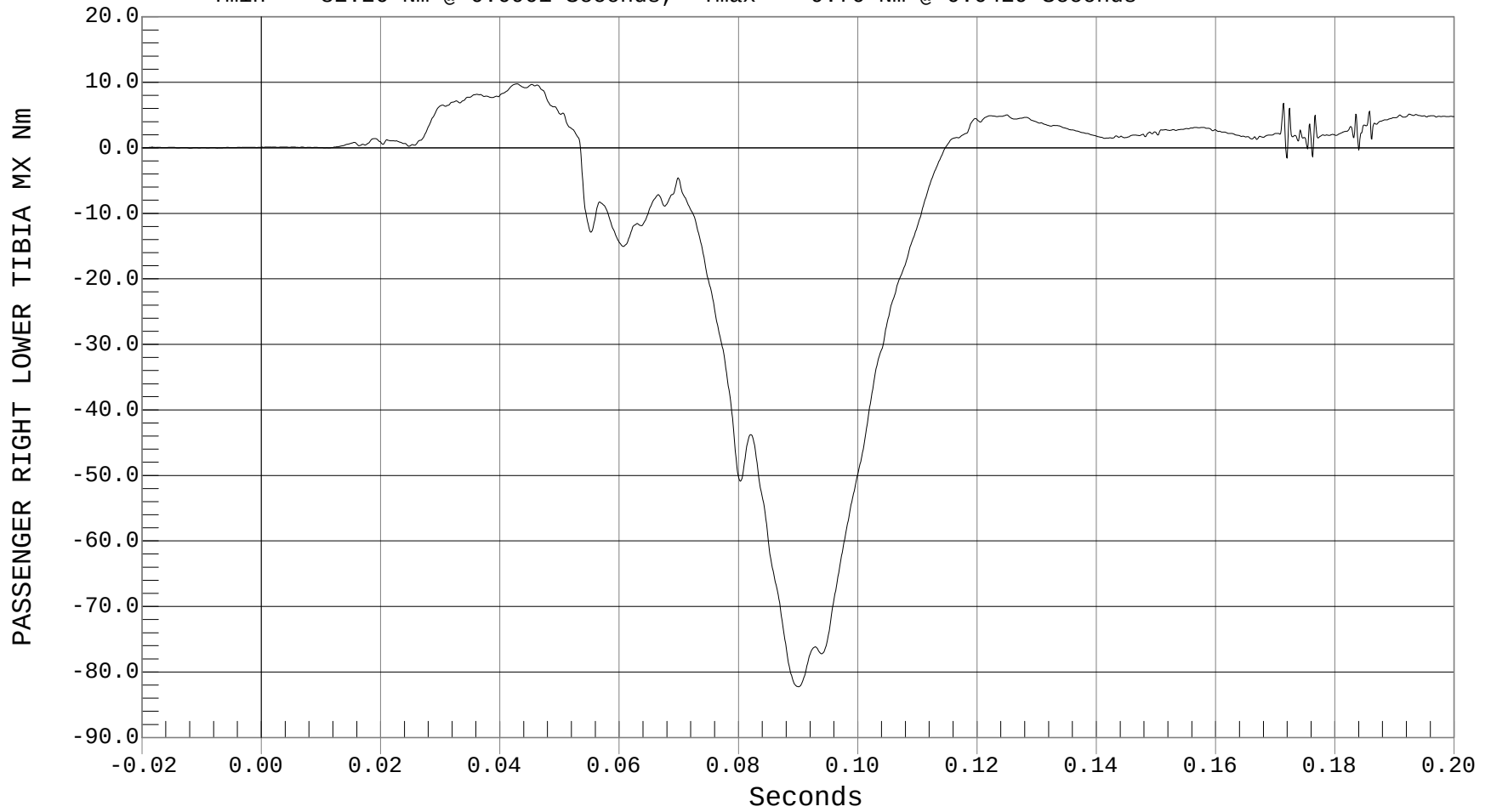
PASSENGER RIGHT LOWER TIBIA MOMENT X

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 600

— 1 PASSENGER RIGHT LOWER TIBIA MX, b00095MF.M84

Ymin = -82.26 Nm @ 0.0901 Seconds, Ymax = 9.76 Nm @ 0.0429 Seconds





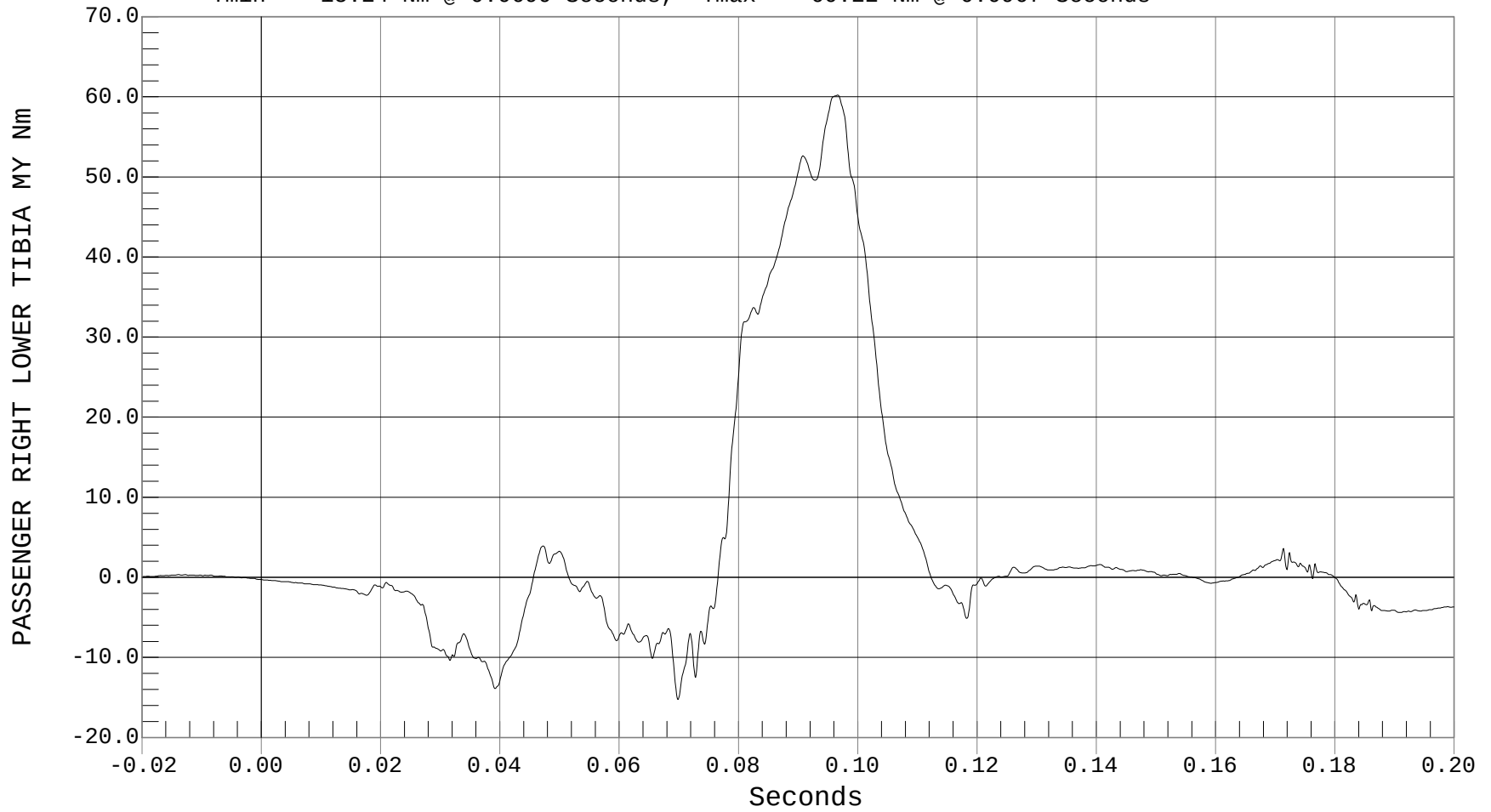
PASSENGER RIGHT LOWER TIBIA MOMENT Y

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 600

— 1 PASSENGER RIGHT LOWER TIBIA MY, b00095MF.M85

Ymin = -15.24 Nm @ 0.0699 Seconds, Ymax = 60.22 Nm @ 0.0967 Seconds





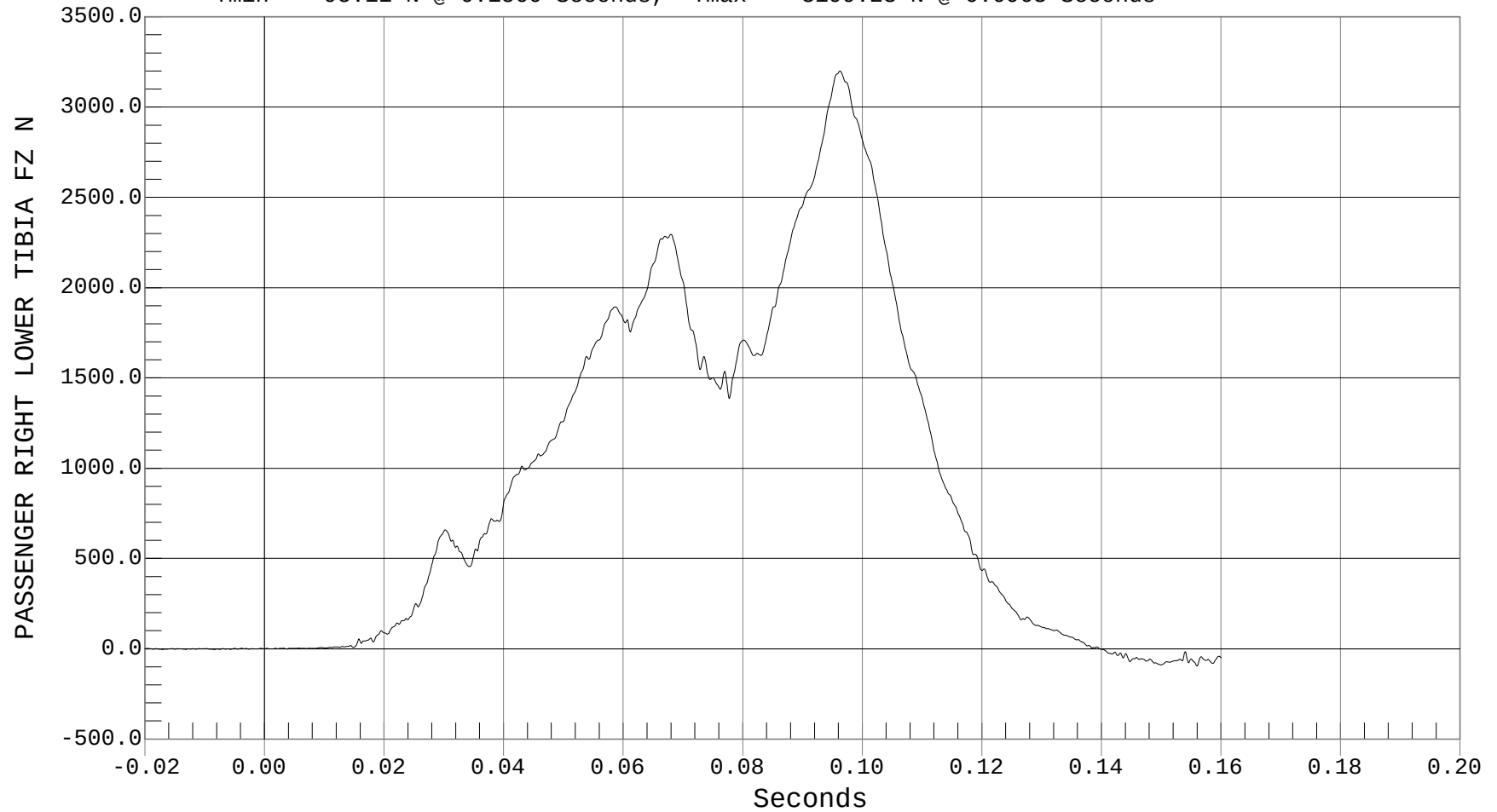
PASSENGER RIGHT LOWER TIBIA FORCE Z (QD AFTER 160 msec.)

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 600

— 1 PASSENGER RIGHT LOWER TIBIA FZ, b00095FF.F86

Ymin = -95.11 N @ 0.1560 Seconds, Ymax = 3199.23 N @ 0.0963 Seconds





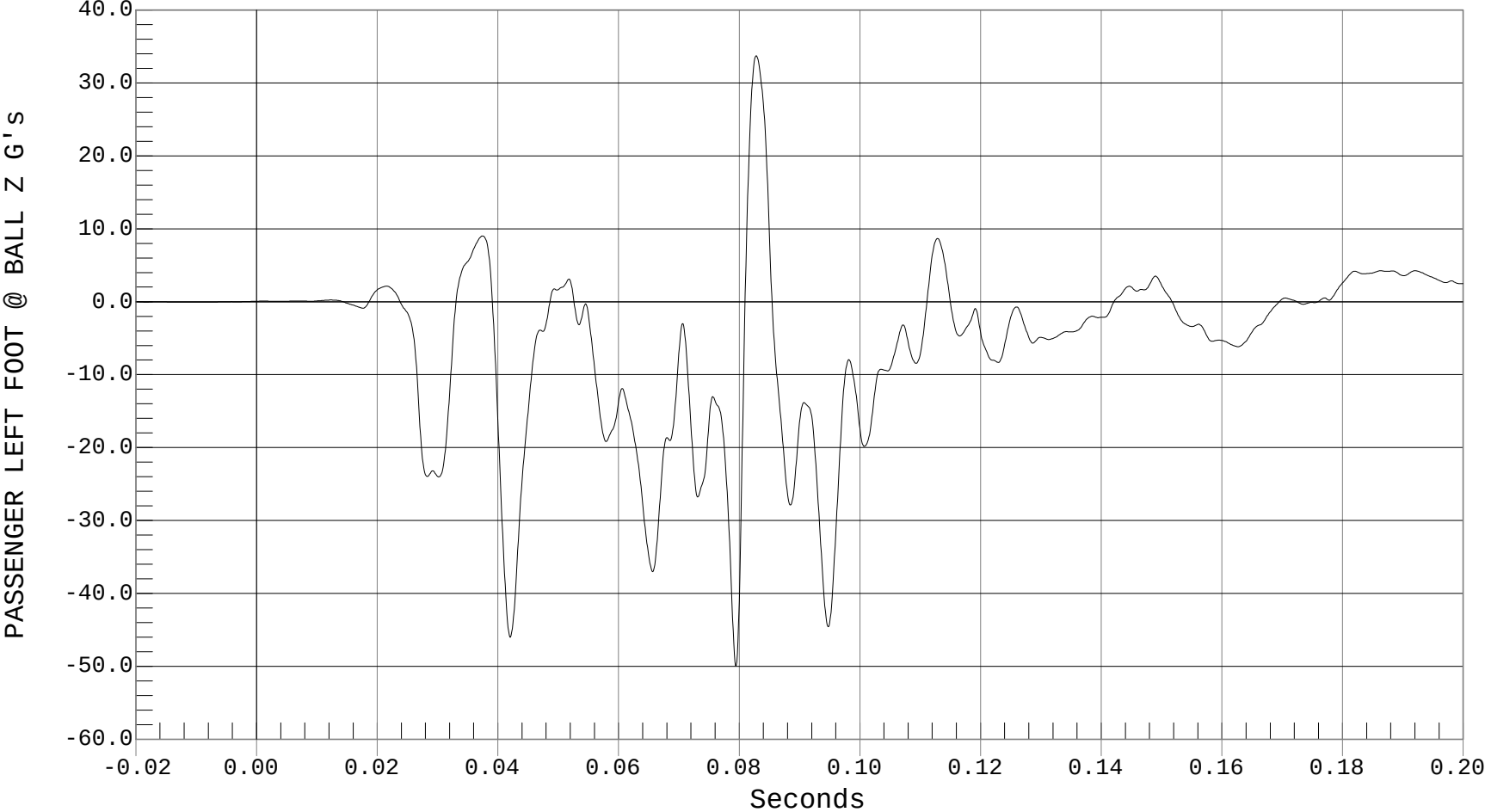
PASSENGER LEFT FOOT @ BALL Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 PASSENGER LEFT FOOT @ BALL Z, c00095AF.A09

Ymin = -49.96 G's @ 0.0795 Seconds, Ymax = 33.75 G's @ 0.0828 Seconds





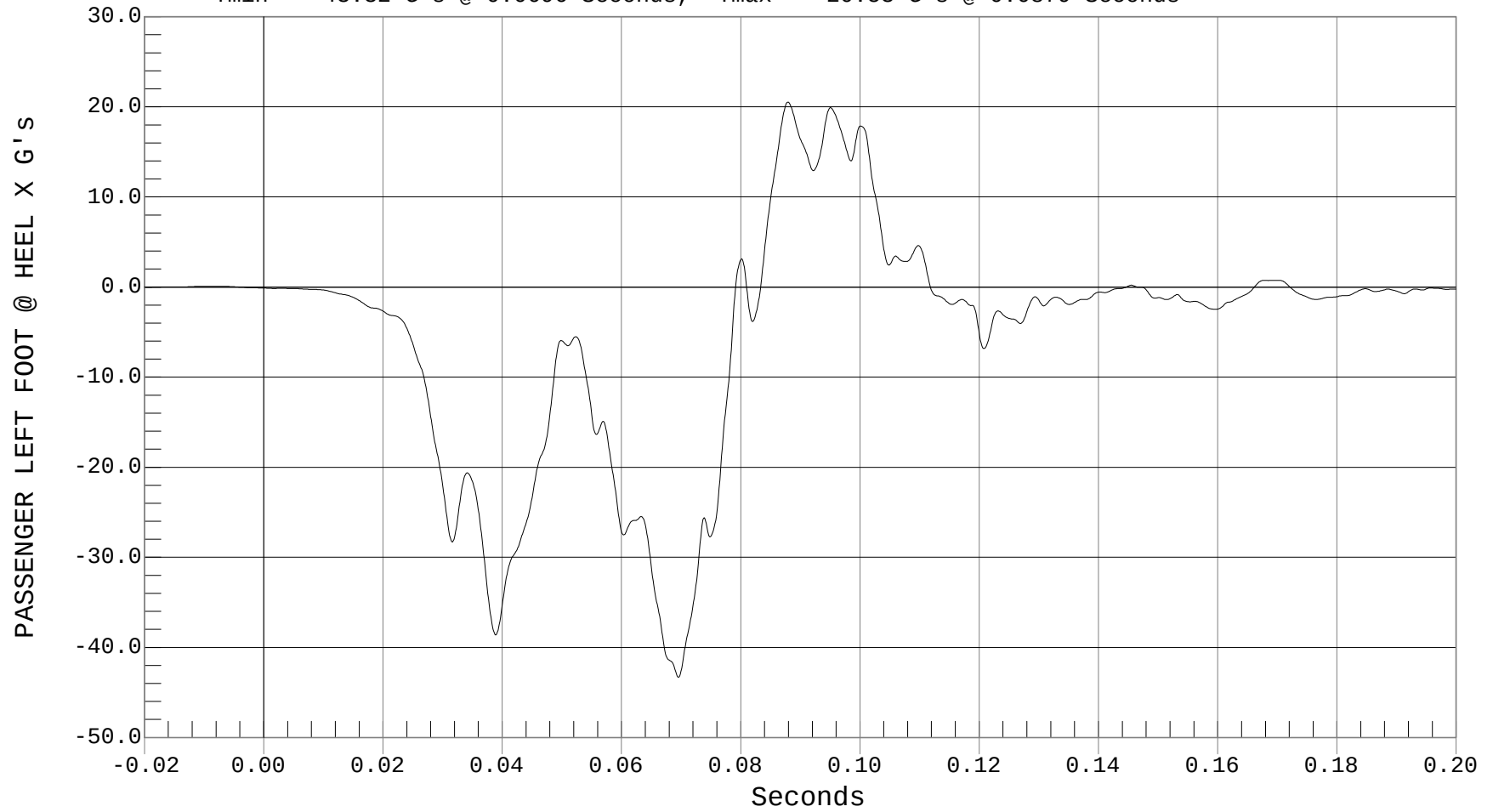
PASSENGER LEFT FOOT @ HEEL X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 PASSENGER LEFT FOOT @ HEEL X, c00095AF.A07

Ymin = -43.32 G's @ 0.0696 Seconds, Ymax = 20.53 G's @ 0.0879 Seconds





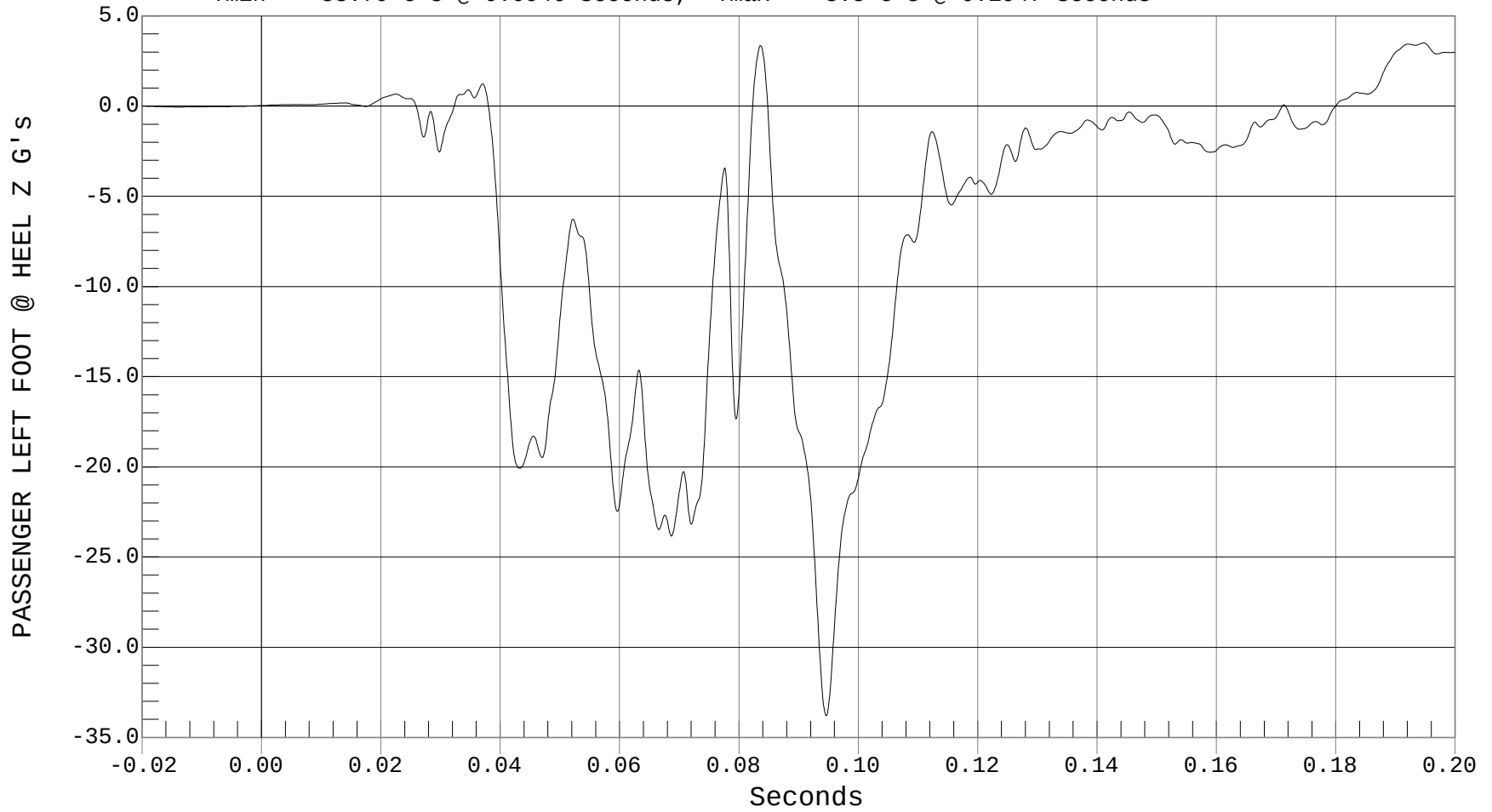
PASSENGER LEFT FOOT @ HEEL Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 PASSENGER LEFT FOOT @ HEEL Z, c00095AF.A08

Ymin = -33.79 G's @ 0.0946 Seconds, Ymax = 3.5 G's @ 0.1947 Seconds





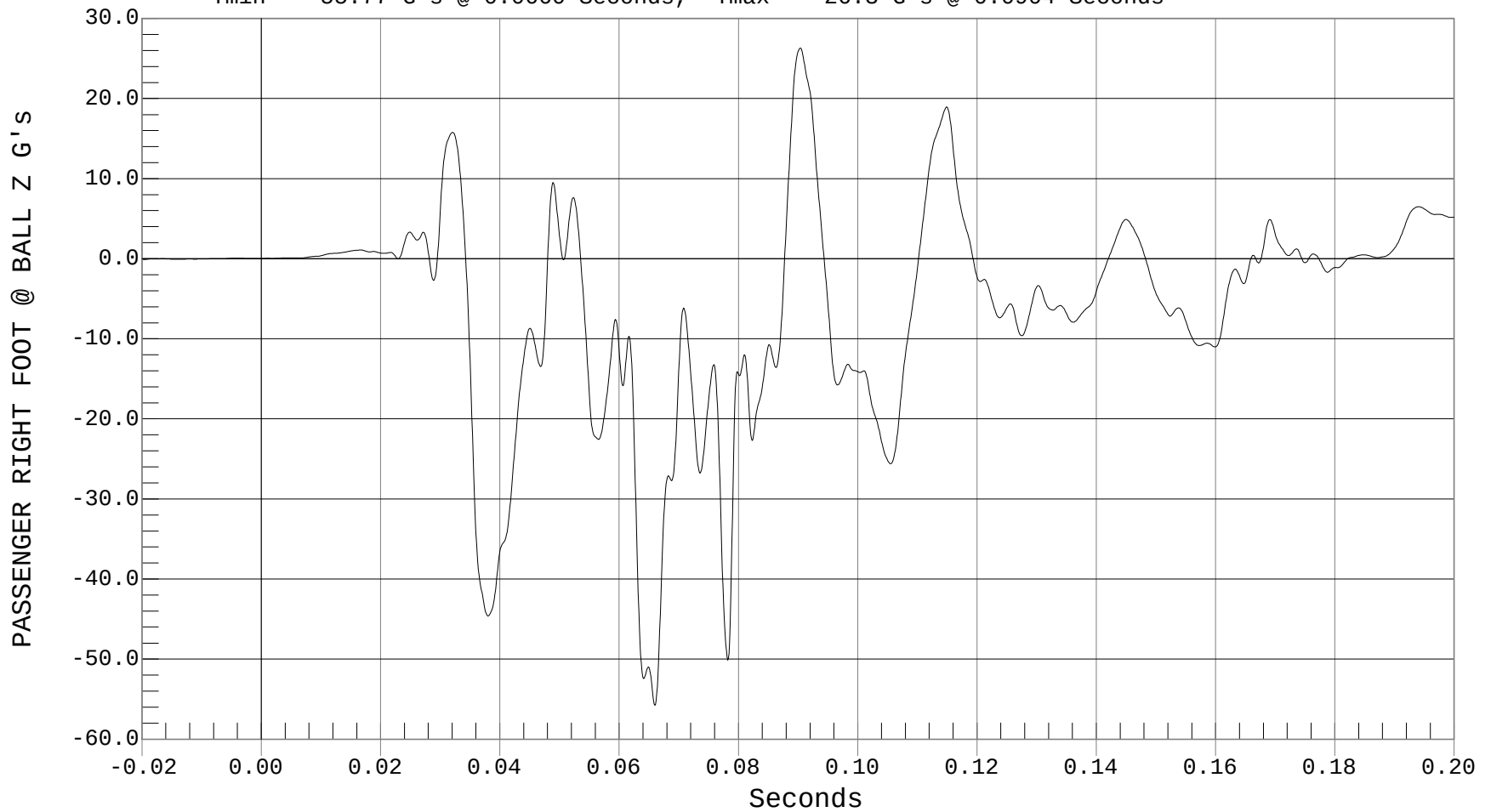
PASSENGER RIGHT FOOT @ BALL Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 PASSENGER RIGHT FOOT @ BALL Z, c00095AF.A06

Ymin = -55.77 G's @ 0.0660 Seconds, Ymax = 26.3 G's @ 0.0904 Seconds





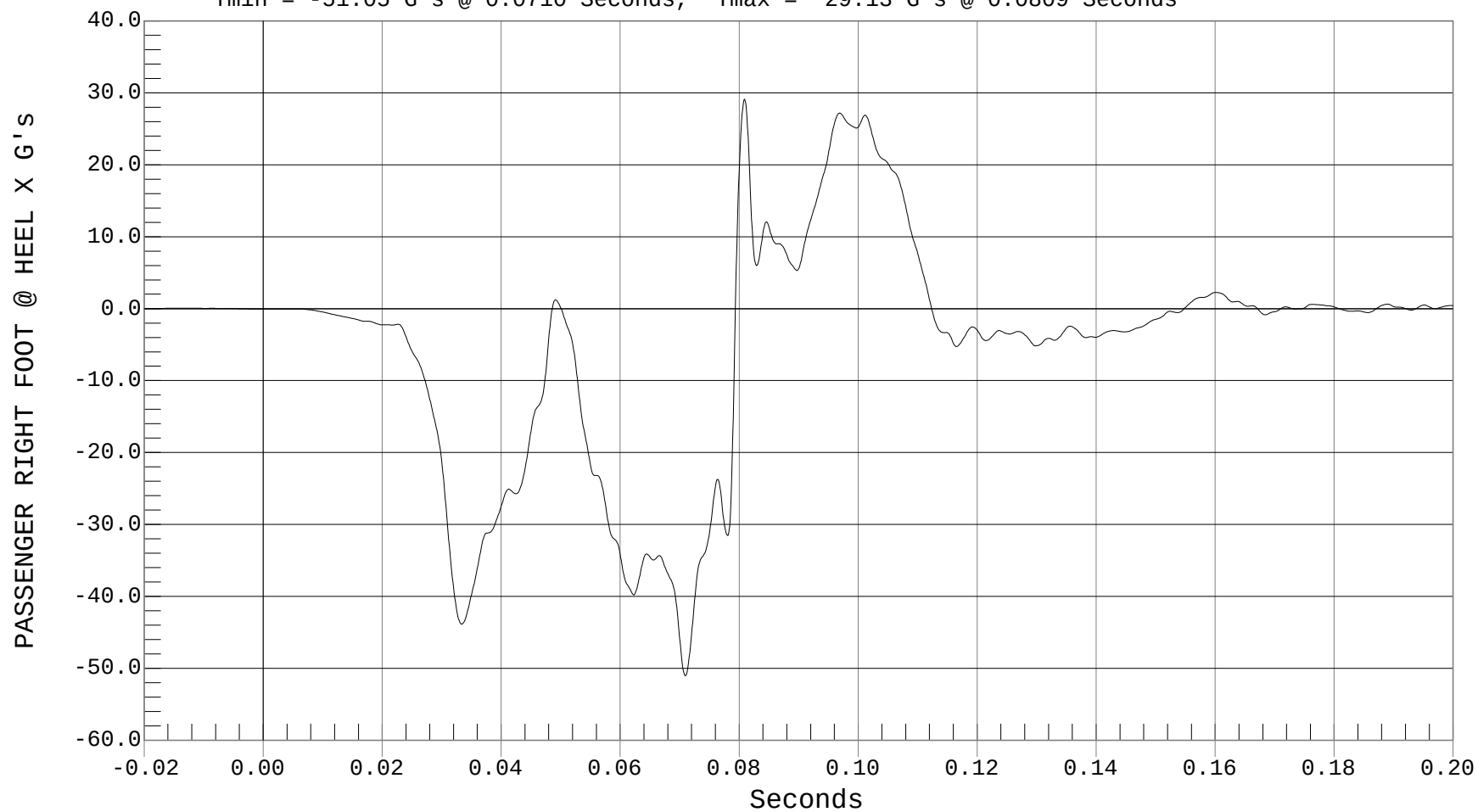
PASSENGER RIGHT FOOT @ HEEL X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 PASSENGER RIGHT FOOT @ HEEL X, c00095AF.A04

Ymin = -51.05 G's @ 0.0710 Seconds, Ymax = 29.13 G's @ 0.0809 Seconds





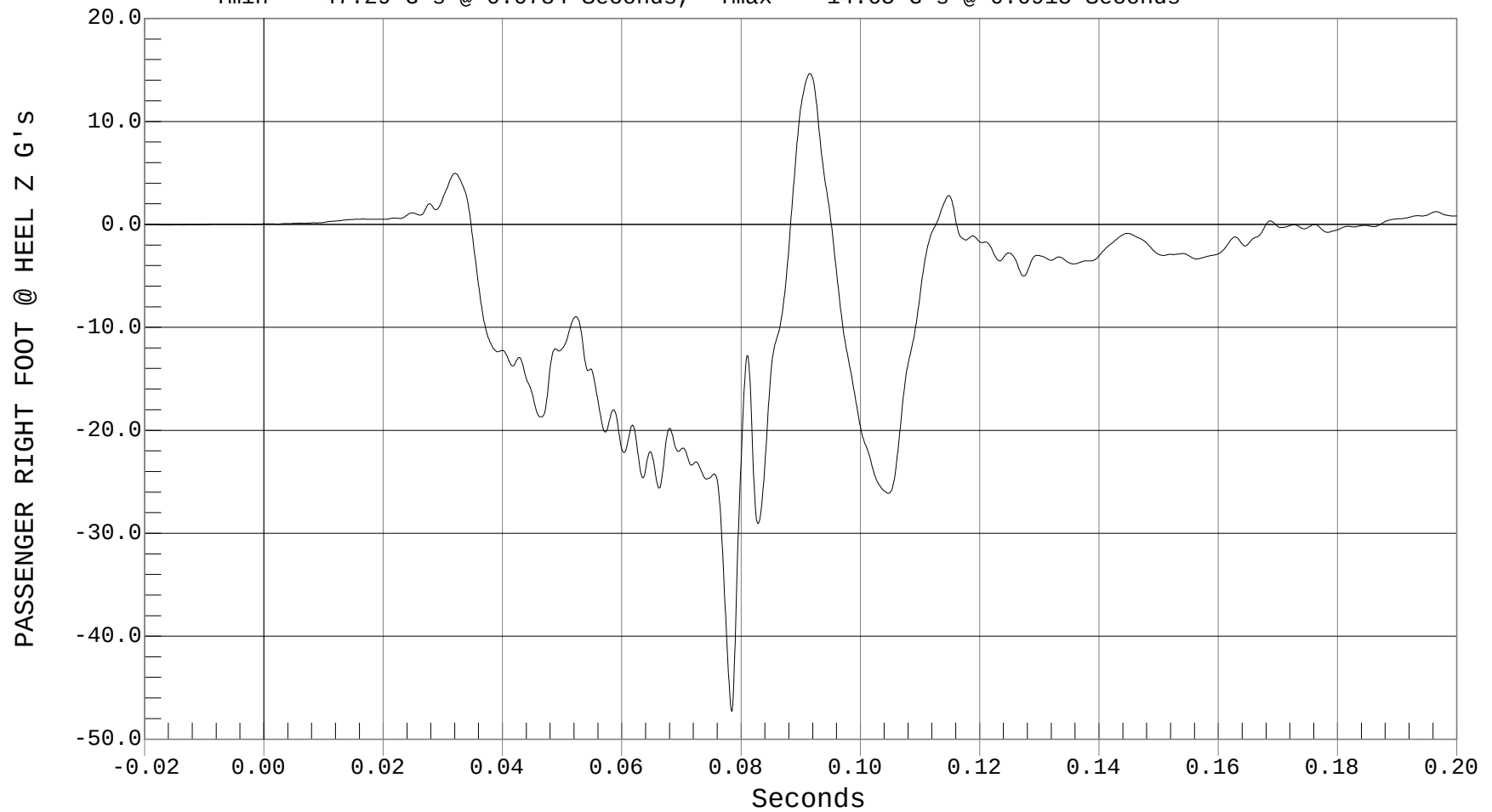
PASSENGER RIGHT FOOT @ HEEL Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 PASSENGER RIGHT FOOT @ HEEL Z, c00095AF.A05

Ymin = -47.29 G's @ 0.0784 Seconds, Ymax = 14.65 G's @ 0.0915 Seconds





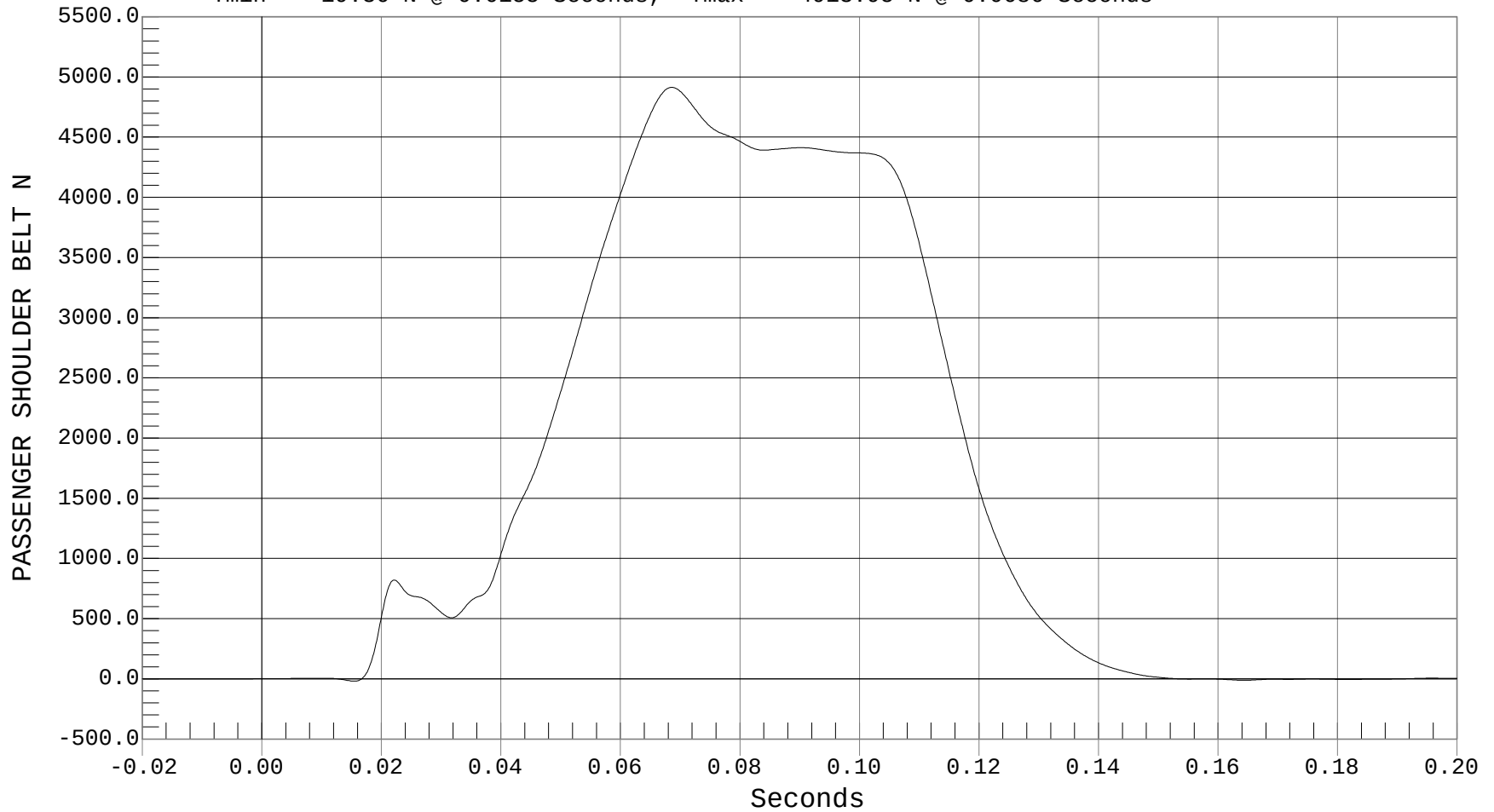
PASSENGER SHOULDER BELT FORCE

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 60

— 1 PASSENGER SHOULDER BELT, b00095FF.F67

Ymin = -19.36 N @ 0.0155 Seconds, Ymax = 4913.95 N @ 0.0686 Seconds





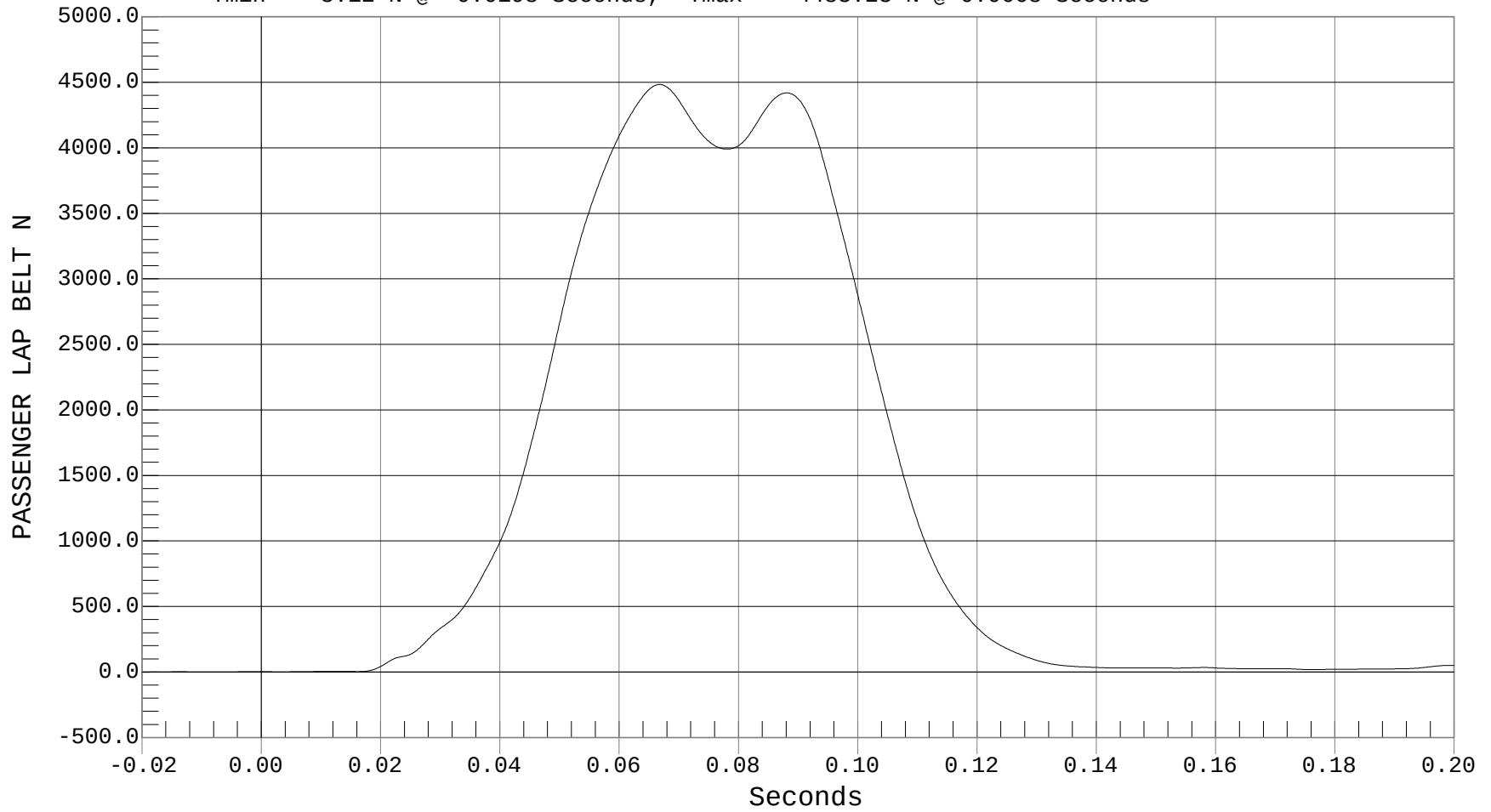
PASSENGER LAP BELT FORCE

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 60

— 1 PASSENGER LAP BELT, b00095FF.F68

Ymin = -3.12 N @ -0.0198 Seconds, Ymax = 4483.23 N @ 0.0668 Seconds





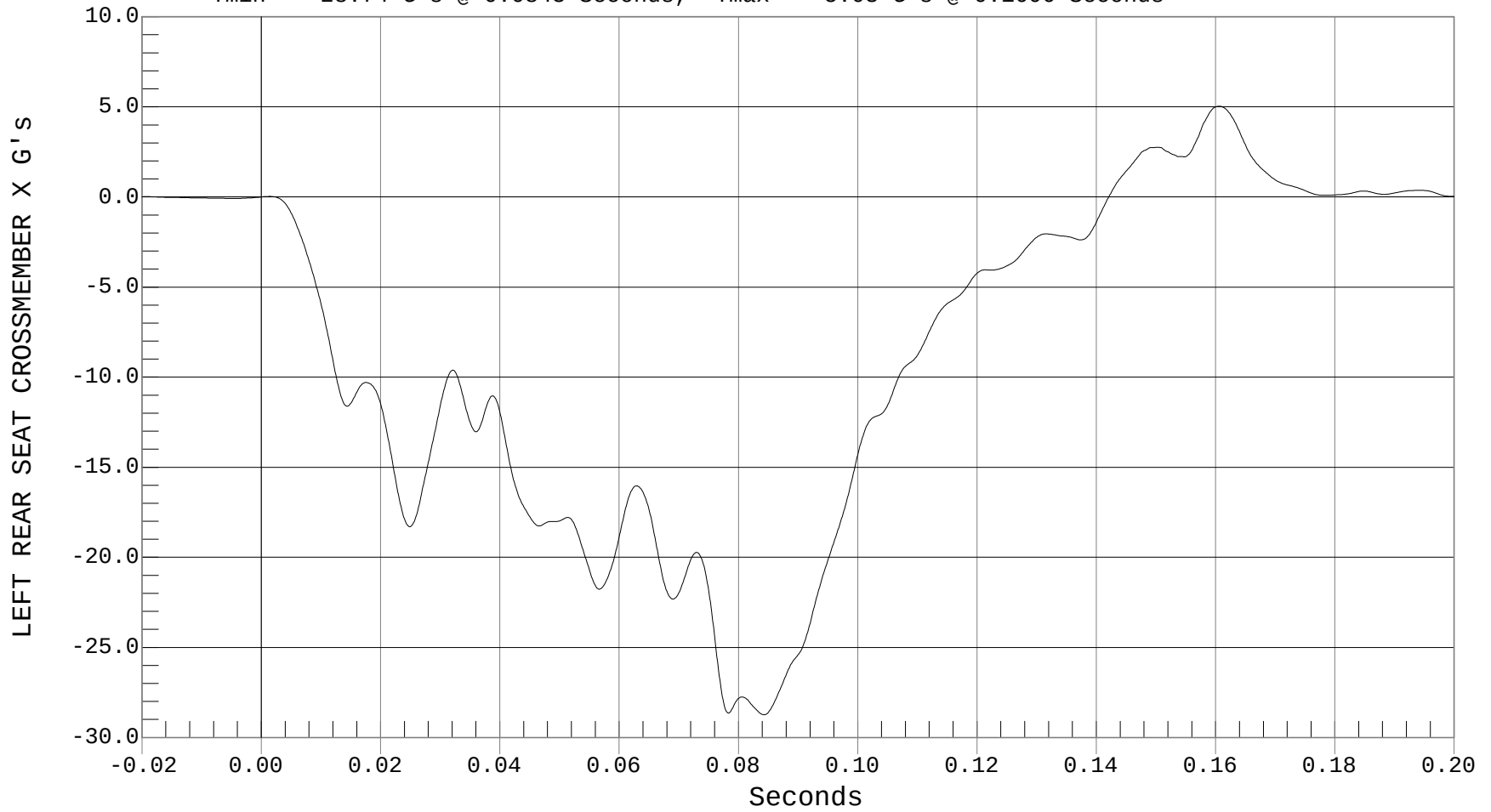
LEFT REAR SEAT CROSSMEMBER X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 60

— 1 LEFT REAR SEAT CROSSMEMBER X, b00095AF.A59

Ymin = -28.74 G's @ 0.0843 Seconds, Ymax = 5.03 G's @ 0.1606 Seconds





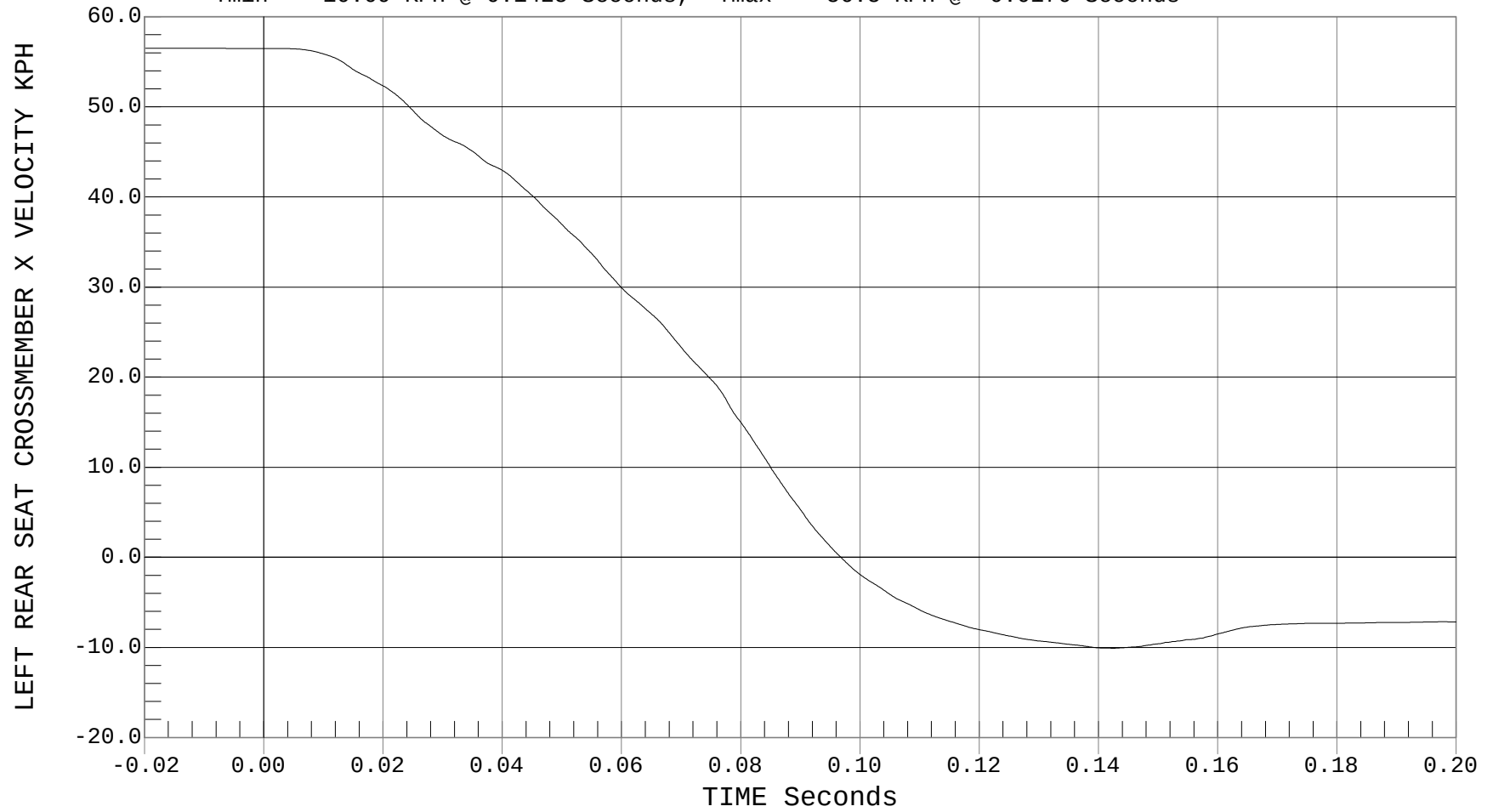
LEFT REAR SEAT CROSSMEMBER X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 LEFT REAR SEAT CROSSMEMBER X VELOCITY, b00095AI.V59

Ymin = -10.09 KPH @ 0.1425 Seconds, Ymax = 56.5 KPH @ -0.0176 Seconds





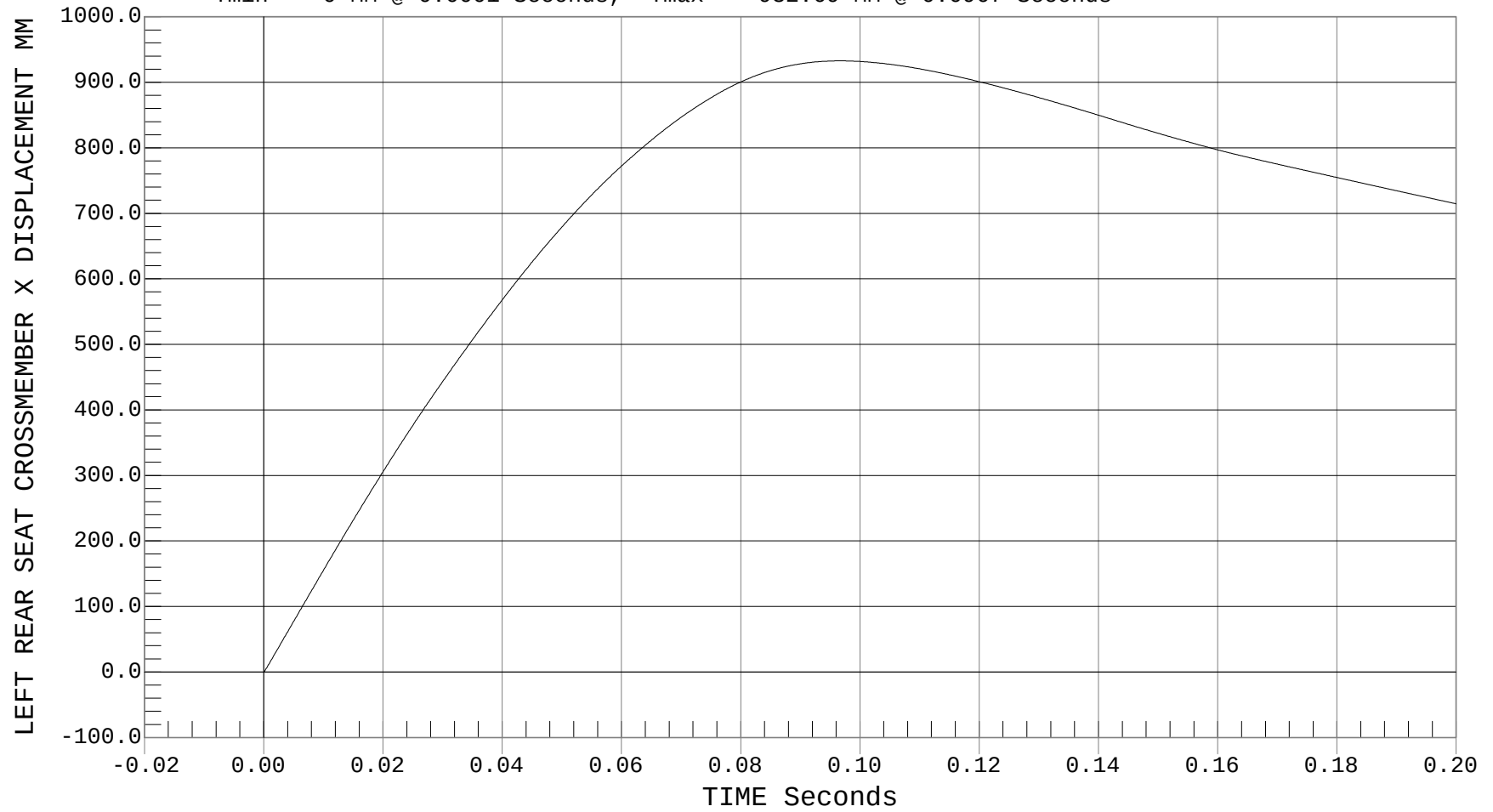
LEFT REAR SEAT CROSSMEMBER X DISPLACEMENT

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 LEFT REAR SEAT CROSSMEMBER X DISPLACEMENT, b00095AI.D59

Ymin = 0 MM @ 0.0001 Seconds, Ymax = 932.69 MM @ 0.0967 Seconds





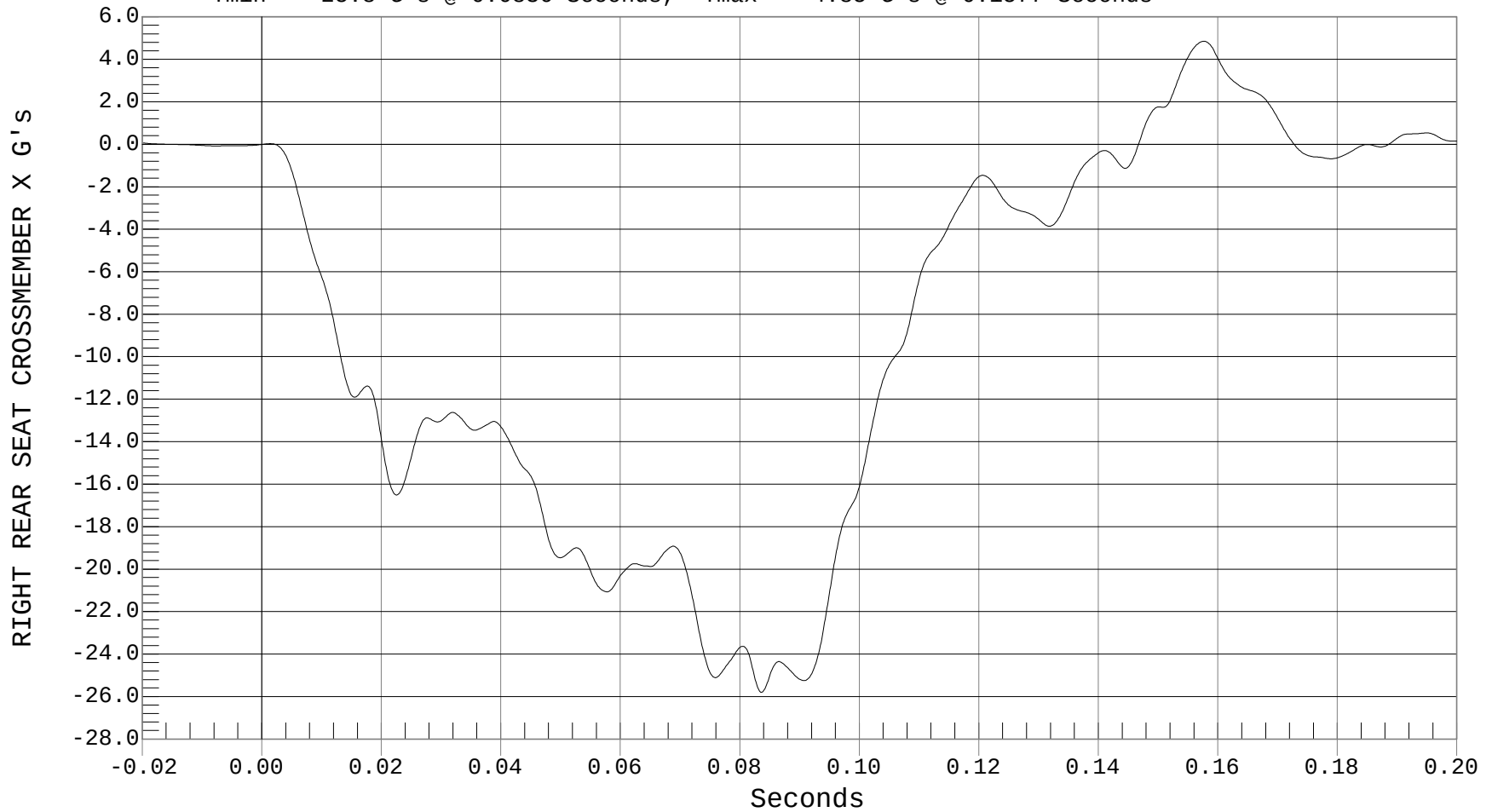
RIGHT REAR SEAT CROSSMEMBER X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 60

— 1 RIGHT REAR SEAT CROSSMEMBER X, b00095AF.A58

Ymin = -25.8 G's @ 0.0836 Seconds, Ymax = 4.85 G's @ 0.1577 Seconds





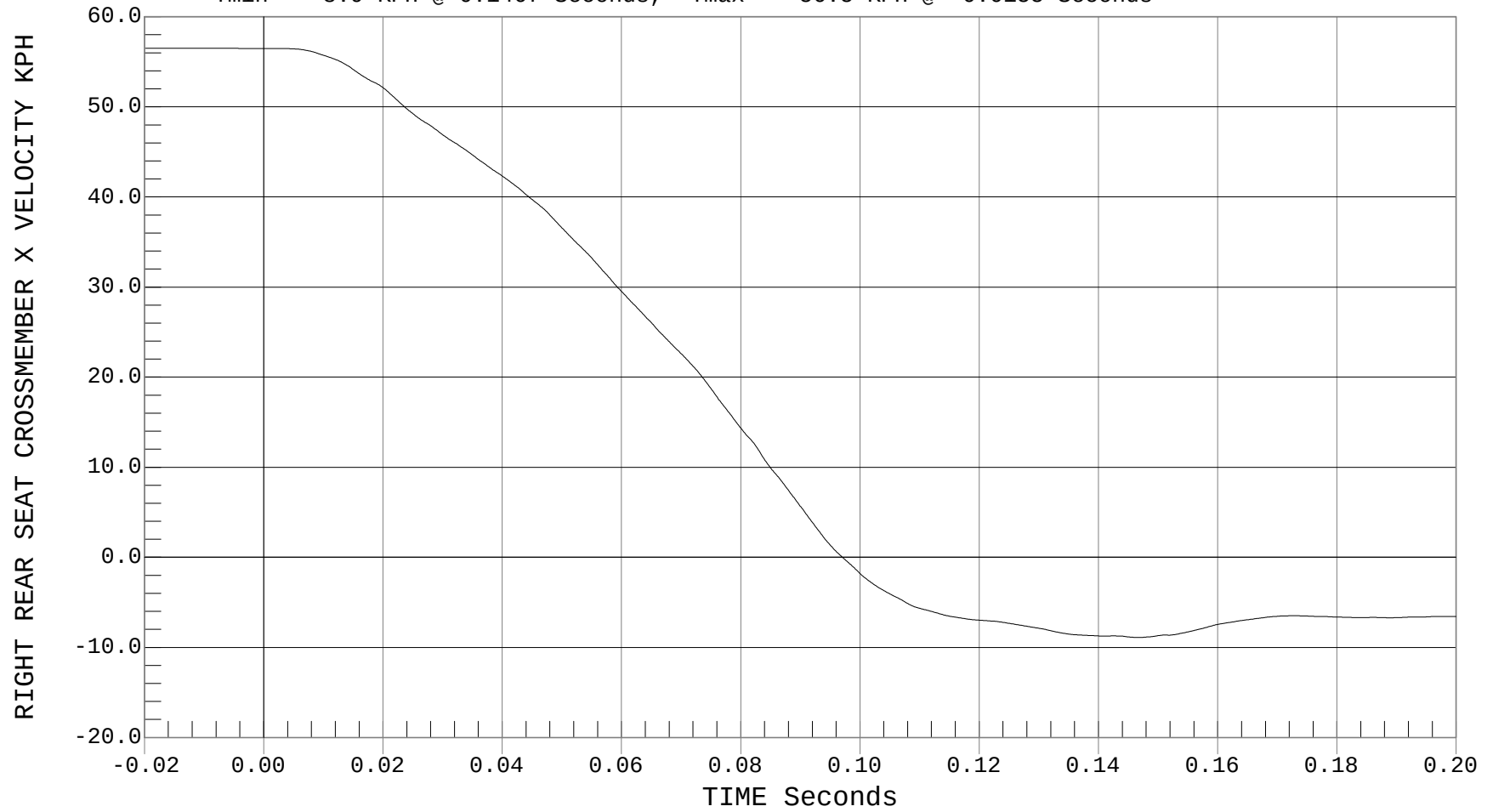
RIGHT REAR SEAT CROSSMEMBER X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 RIGHT REAR SEAT CROSSMEMBER X VELOCITY, b00095AI.V58

Ymin = -8.9 KPH @ 0.1467 Seconds, Ymax = 56.5 KPH @ -0.0155 Seconds





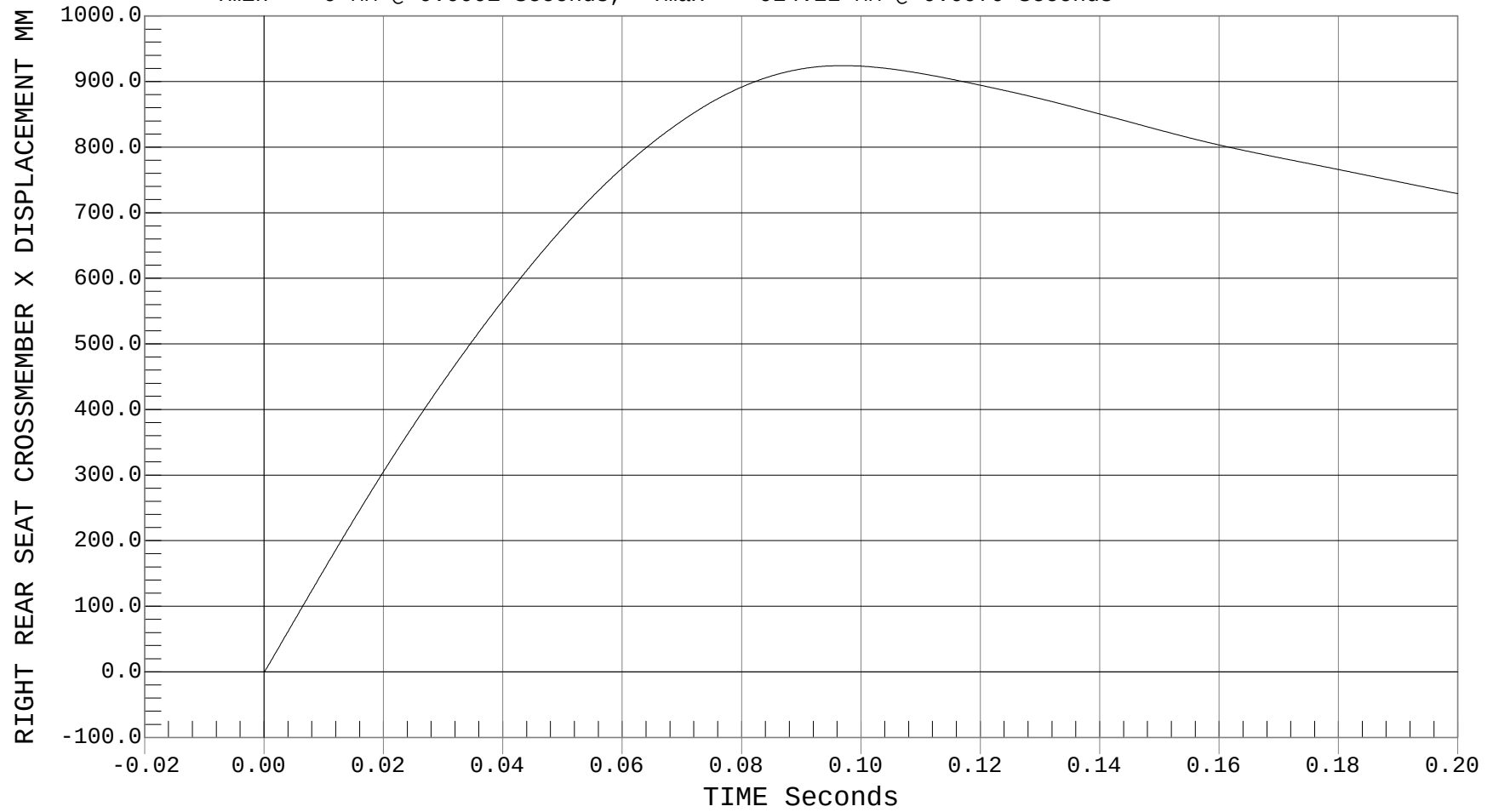
RIGHT REAR SEAT CROSSMEMBER X DISPLACEMENT

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 RIGHT REAR SEAT CROSSMEMBER X DISPLACEMENT, b00095AI.D58

Ymin = 0 MM @ 0.0001 Seconds, Ymax = 924.22 MM @ 0.0970 Seconds





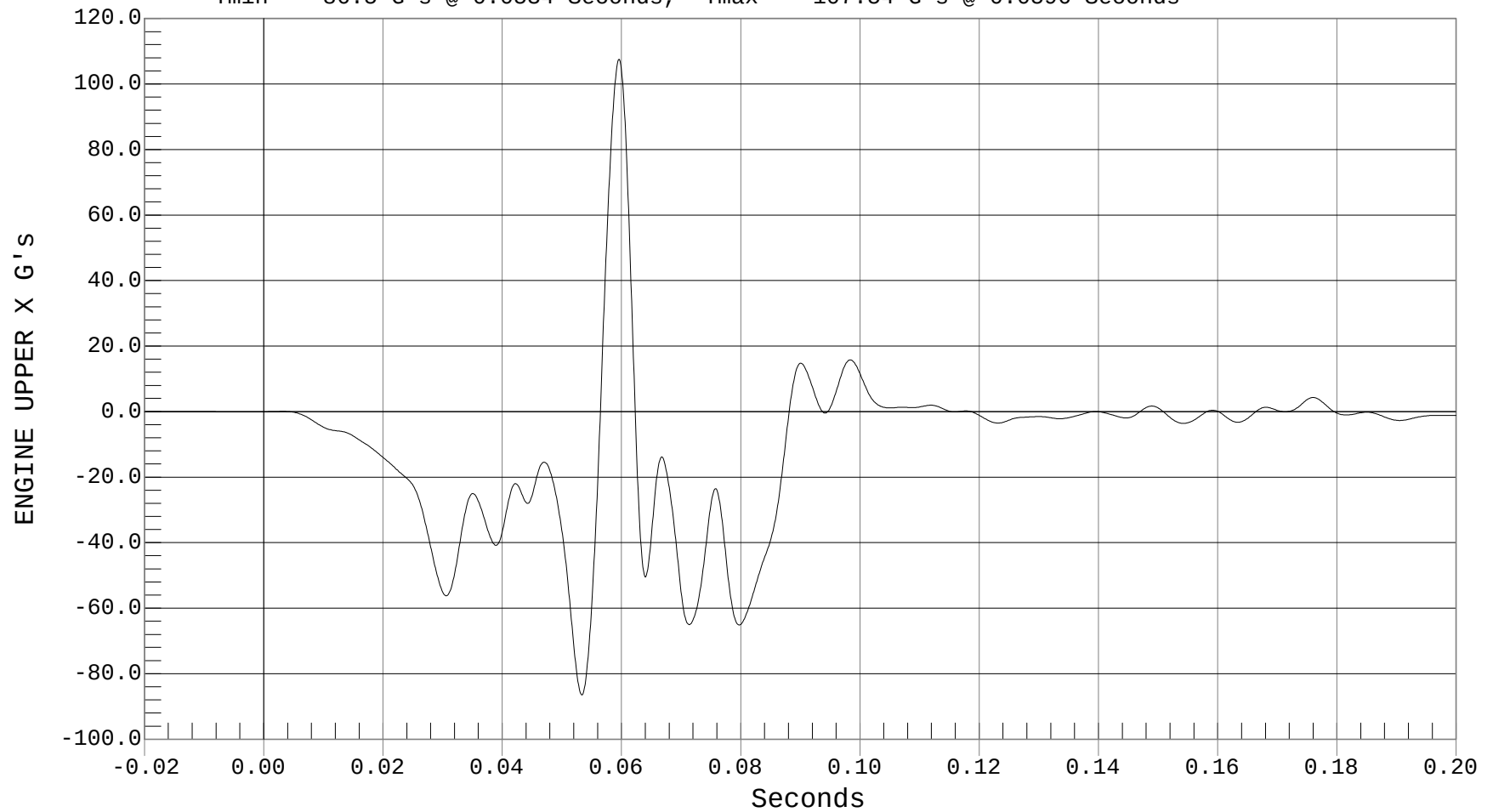
UPPER ENGINE X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 60

— 1 ENGINE UPPER X, b00095AF.A55

Ymin = -86.5 G's @ 0.0534 Seconds, Ymax = 107.54 G's @ 0.0596 Seconds





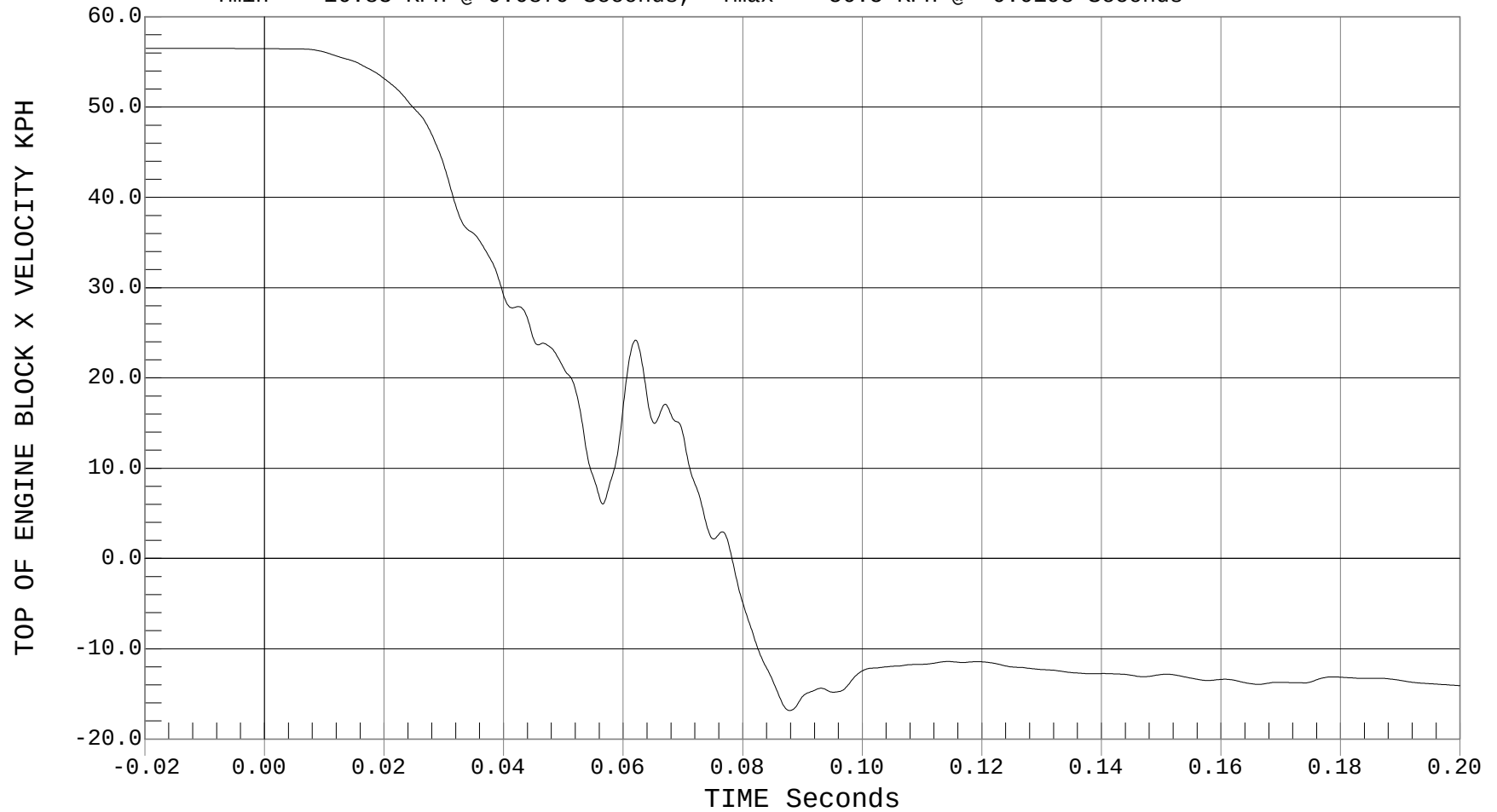
UPPER ENGINE X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 TOP OF ENGINE BLOCK X VELOCITY, b00095AI.V55

Ymin = -16.83 KPH @ 0.0879 Seconds, Ymax = 56.5 KPH @ -0.0198 Seconds





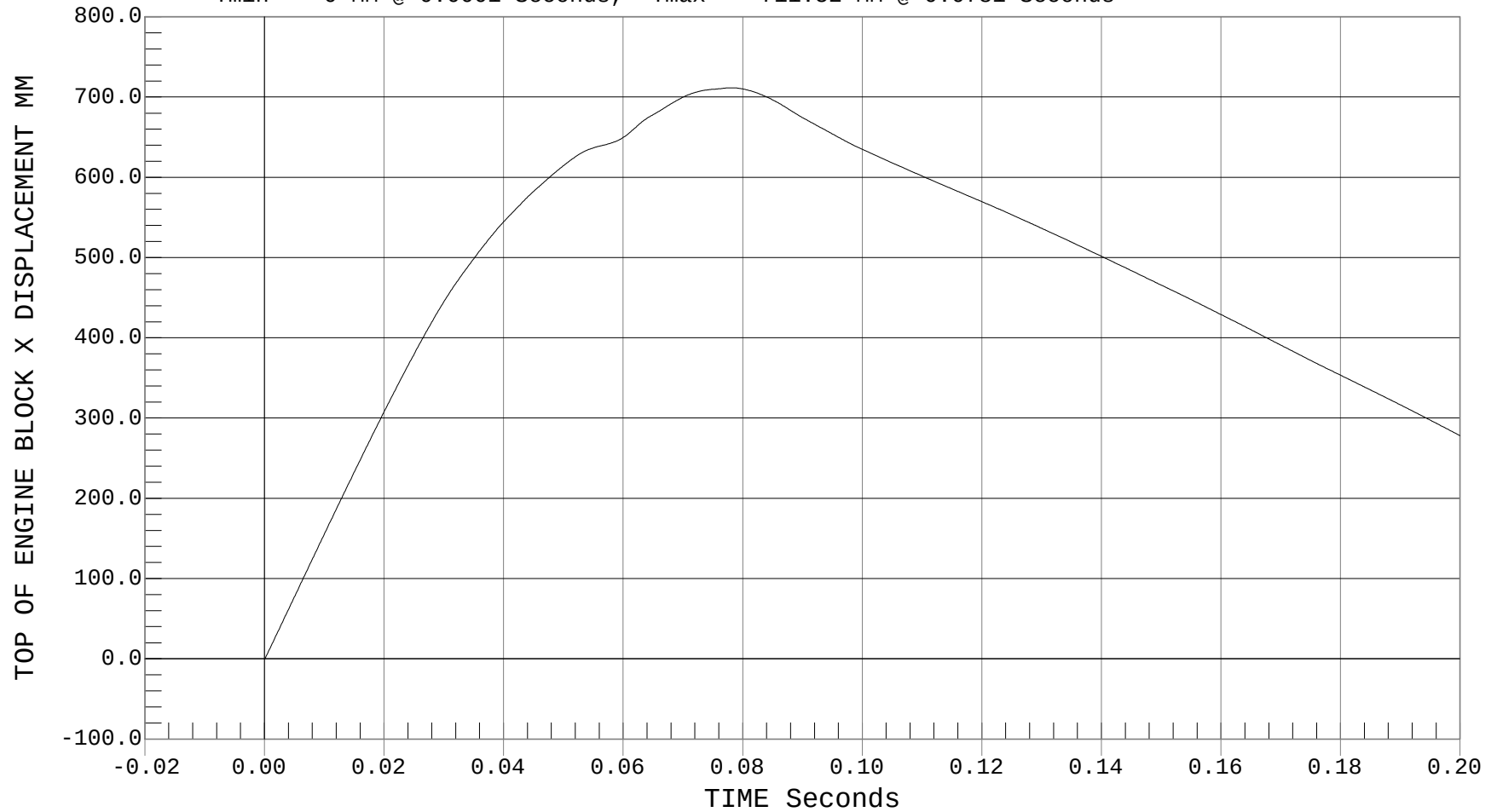
UPPER ENGINE X DISPLACEMENT

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 TOP OF ENGINE BLOCK X DISPLACEMENT, b00095AI.D55

Ymin = 0 MM @ 0.0001 Seconds, Ymax = 711.52 MM @ 0.0781 Seconds





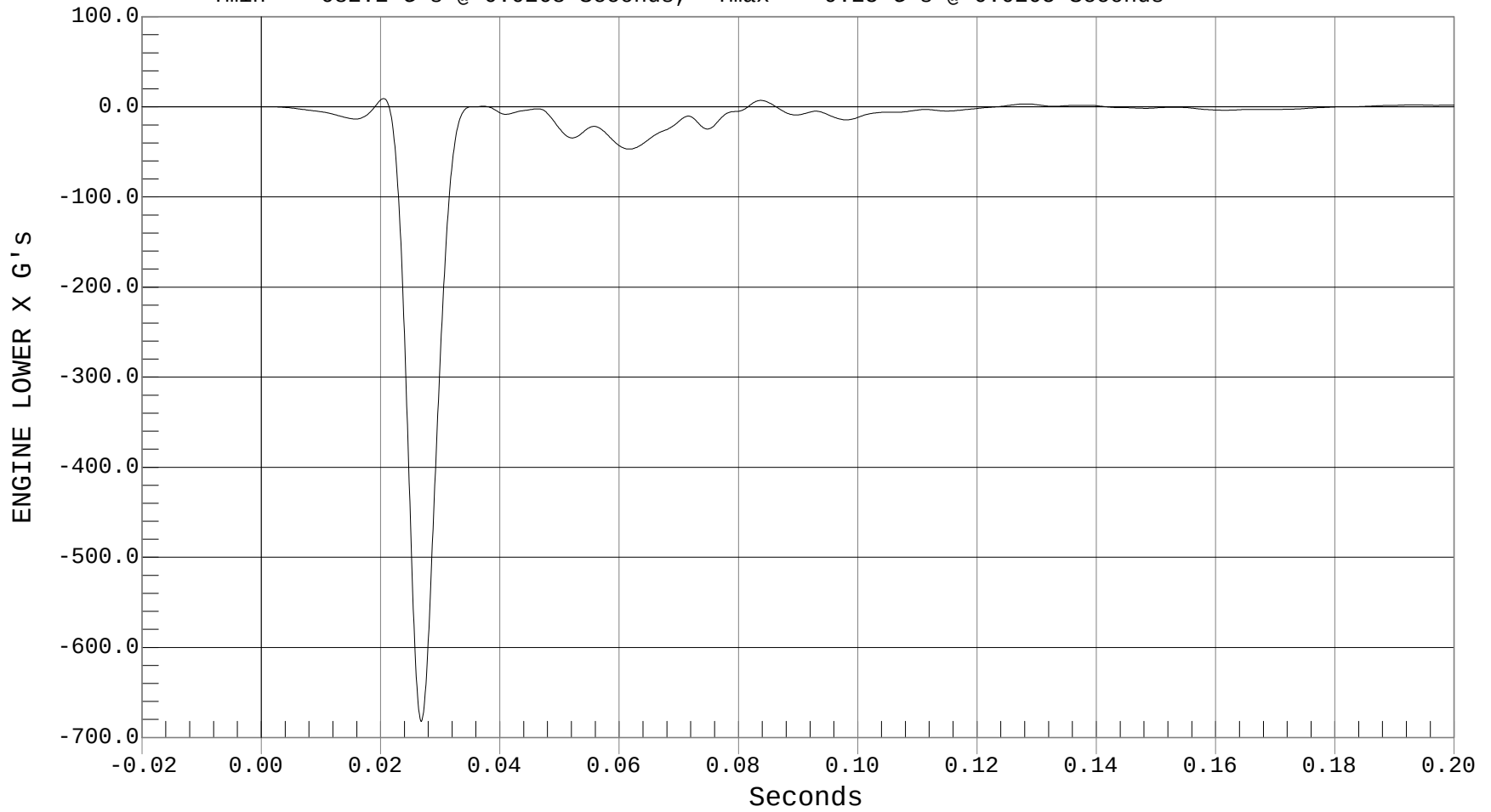
LOWER ENGINE X ACCELERATION (clipped signal)

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 60

— 1 ENGINE LOWER X, b00095AF.A56

Ymin = -682.2 G's @ 0.0268 Seconds, Ymax = 9.25 G's @ 0.0205 Seconds





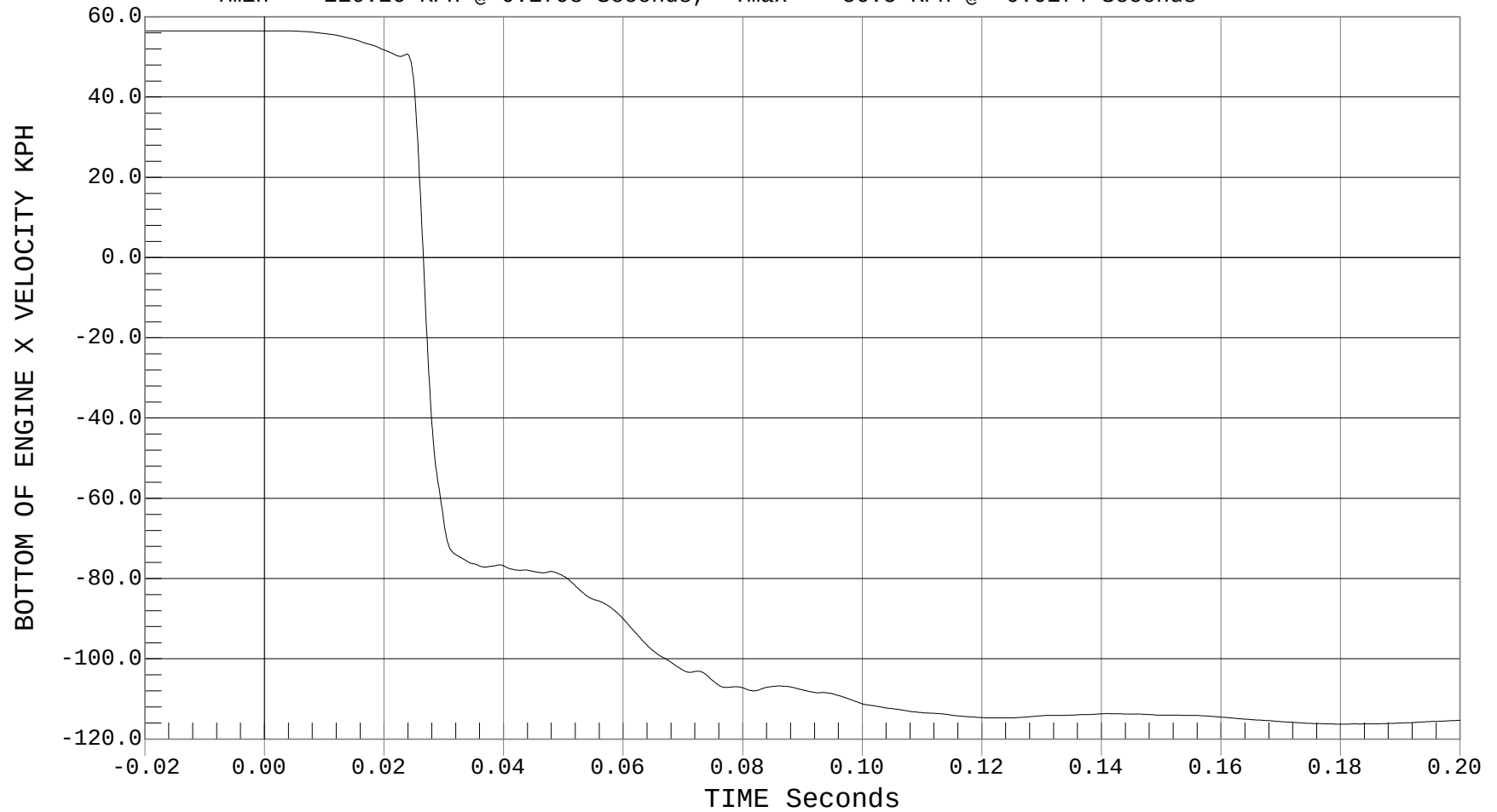
LOWER ENGINE X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 BOTTOM OF ENGINE X VELOCITY, b00095AI.V56

Ymin = -116.26 KPH @ 0.1798 Seconds, Ymax = 56.5 KPH @ -0.0174 Seconds





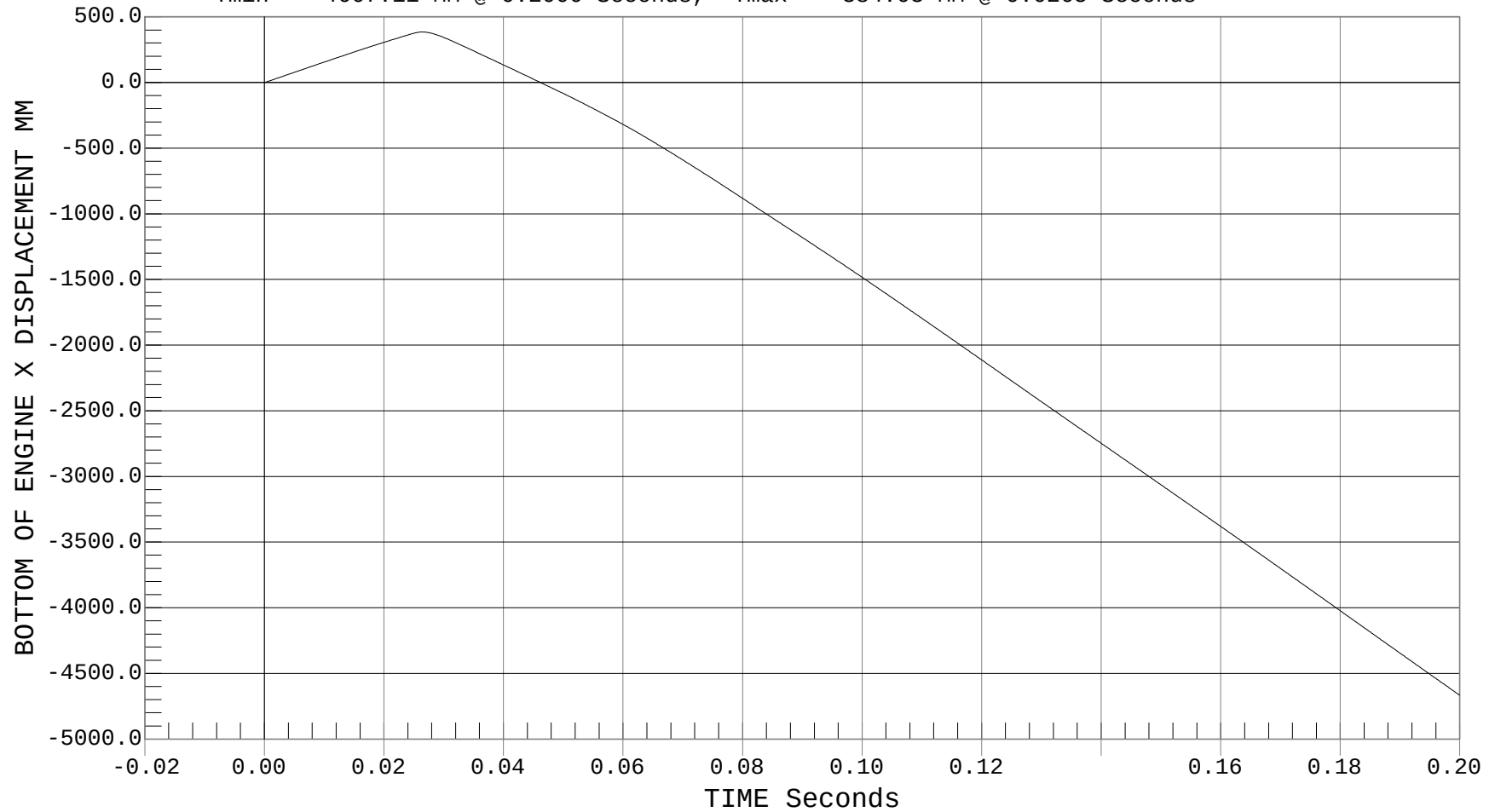
LOWER ENGINE X DISPLACEMENT

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 BOTTOM OF ENGINE X DISPLACEMENT, b00095AI.D56

Ymin = -4667.11 MM @ 0.2000 Seconds, Ymax = 384.03 MM @ 0.0265 Seconds





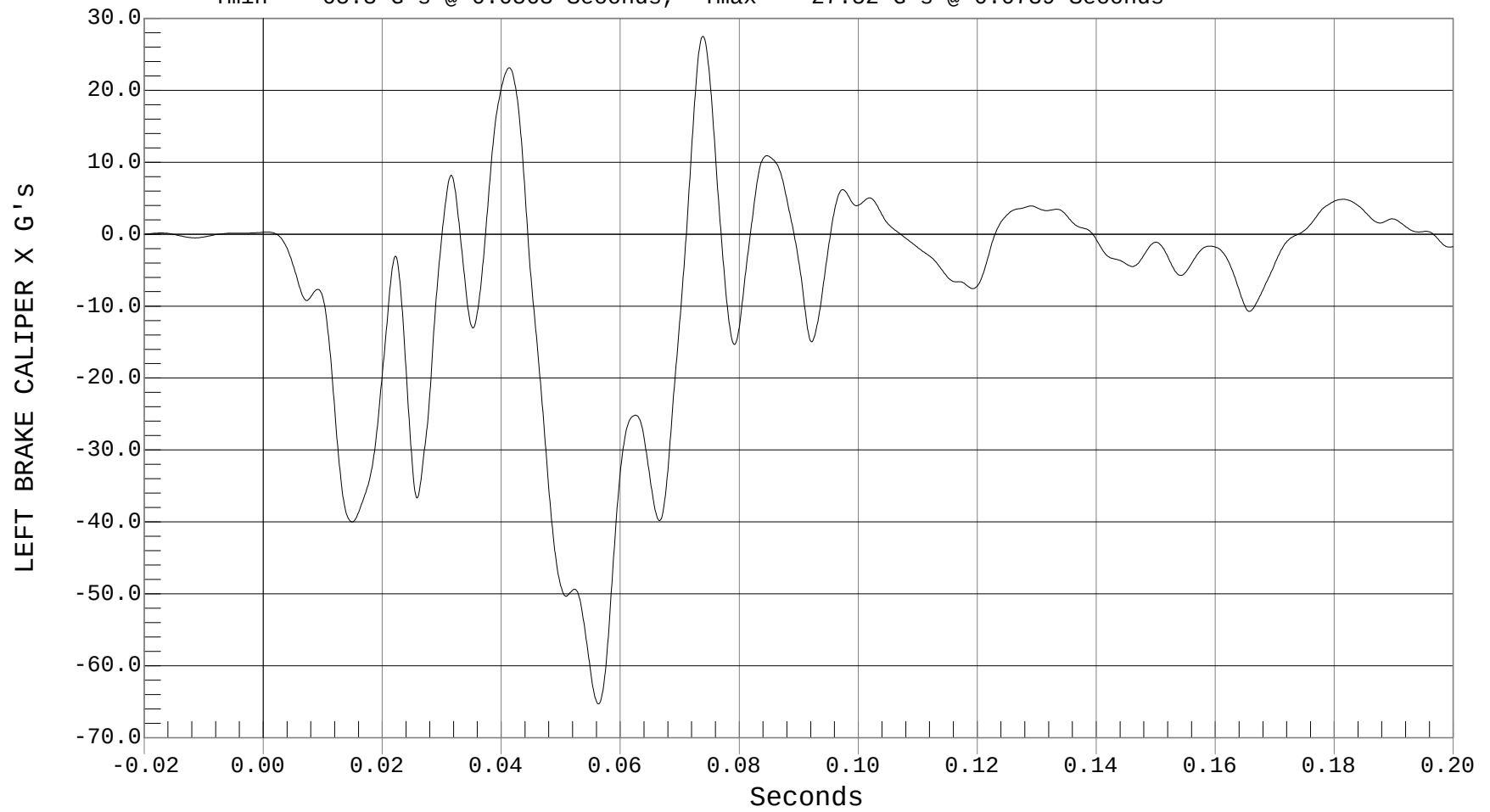
LEFT BRAKE CALIPER X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 60

— 1 LEFT BRAKE CALIPER X, b00095AF.A61

Ymin = -65.3 G's @ 0.0563 Seconds, Ymax = 27.52 G's @ 0.0739 Seconds





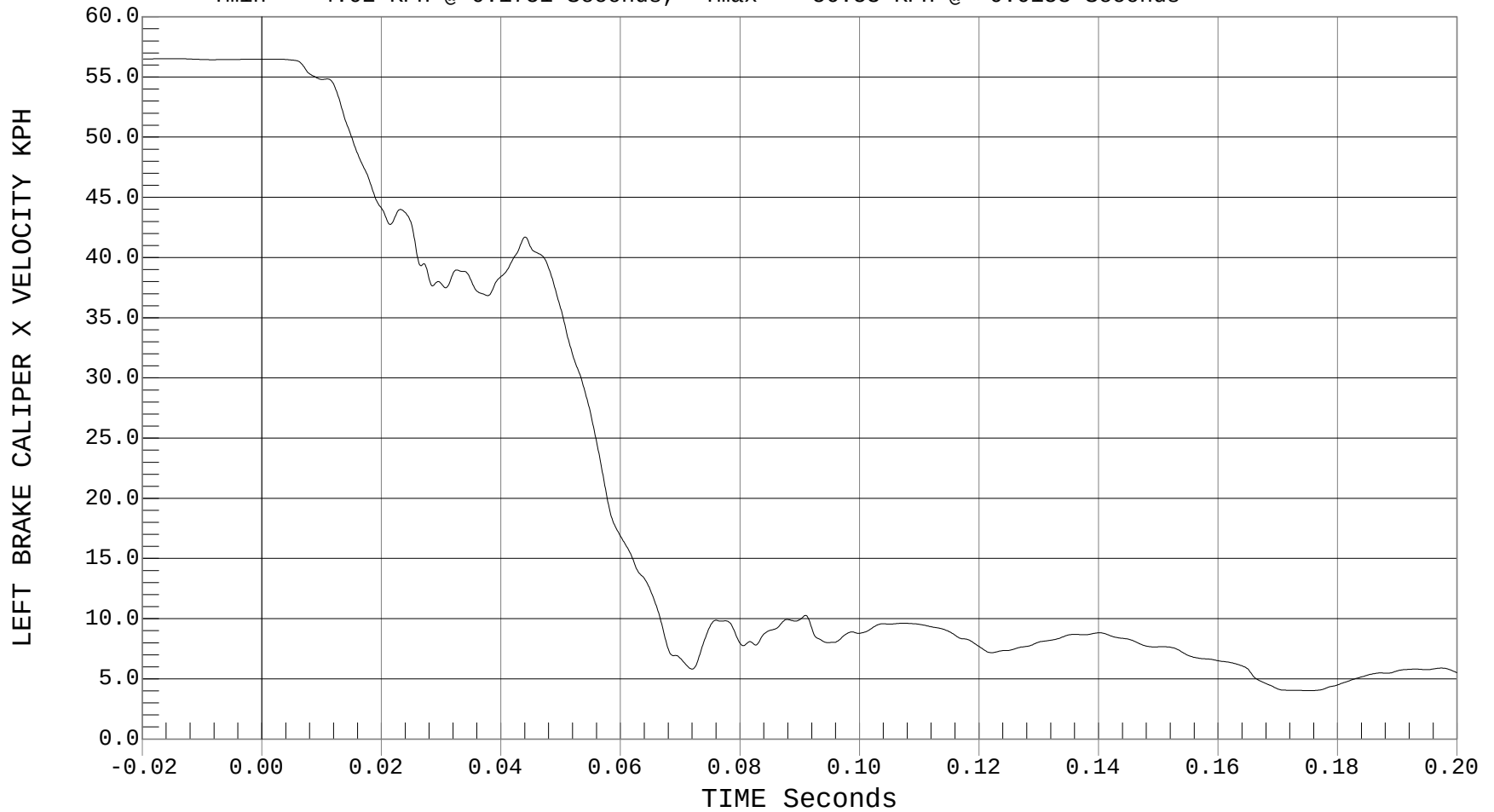
LEFT BRAKE CALIPER X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 LEFT BRAKE CALIPER X VELOCITY, b00095AI.V61

Ymin = 4.02 KPH @ 0.1751 Seconds, Ymax = 56.53 KPH @ -0.0153 Seconds





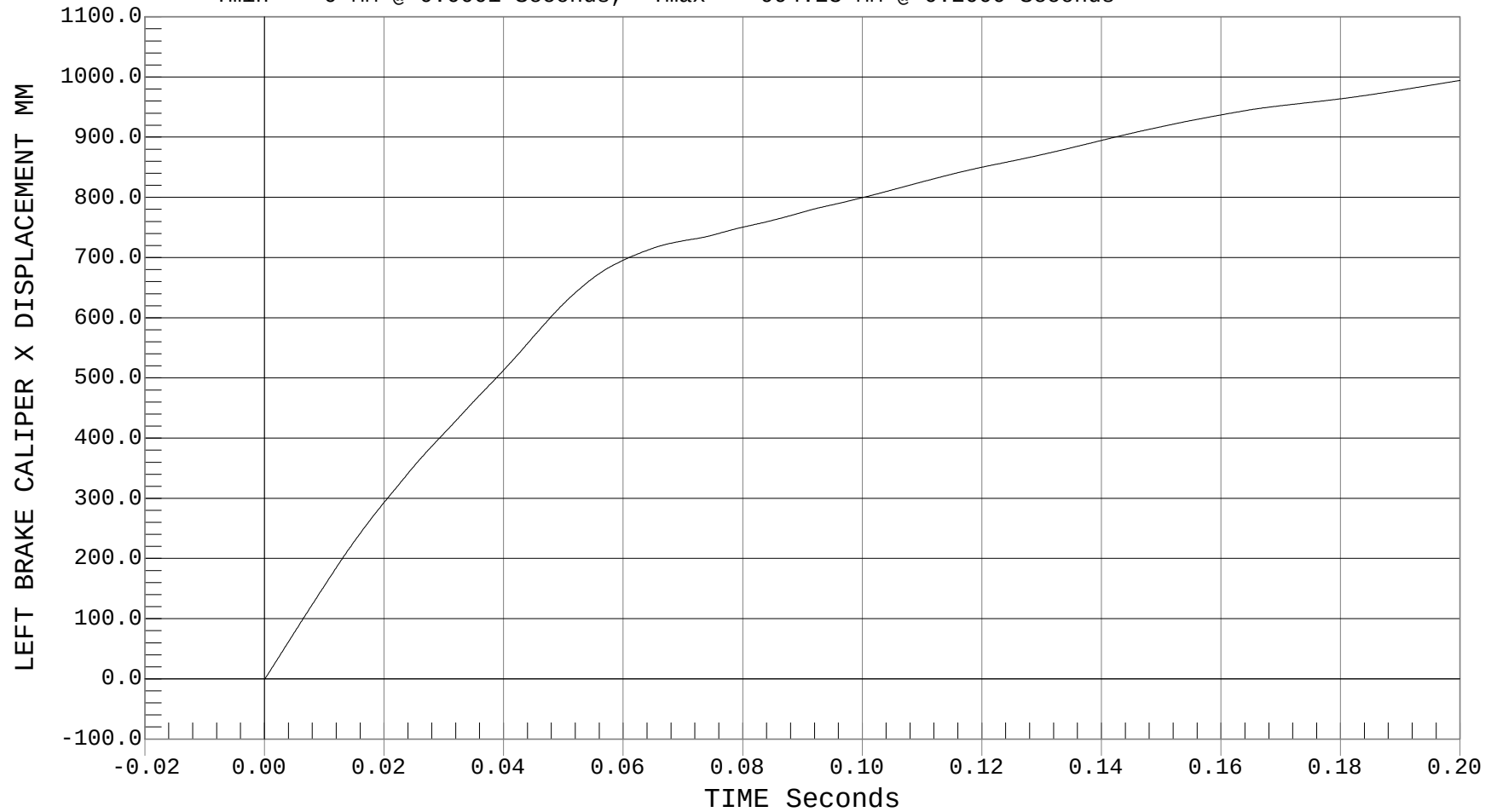
LEFT BRAKE CALIPER X DISPLACEMENT

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 LEFT BRAKE CALIPER X DISPLACEMENT, b00095AI.D61

Ymin = 0 MM @ 0.0001 Seconds, Ymax = 994.23 MM @ 0.2000 Seconds





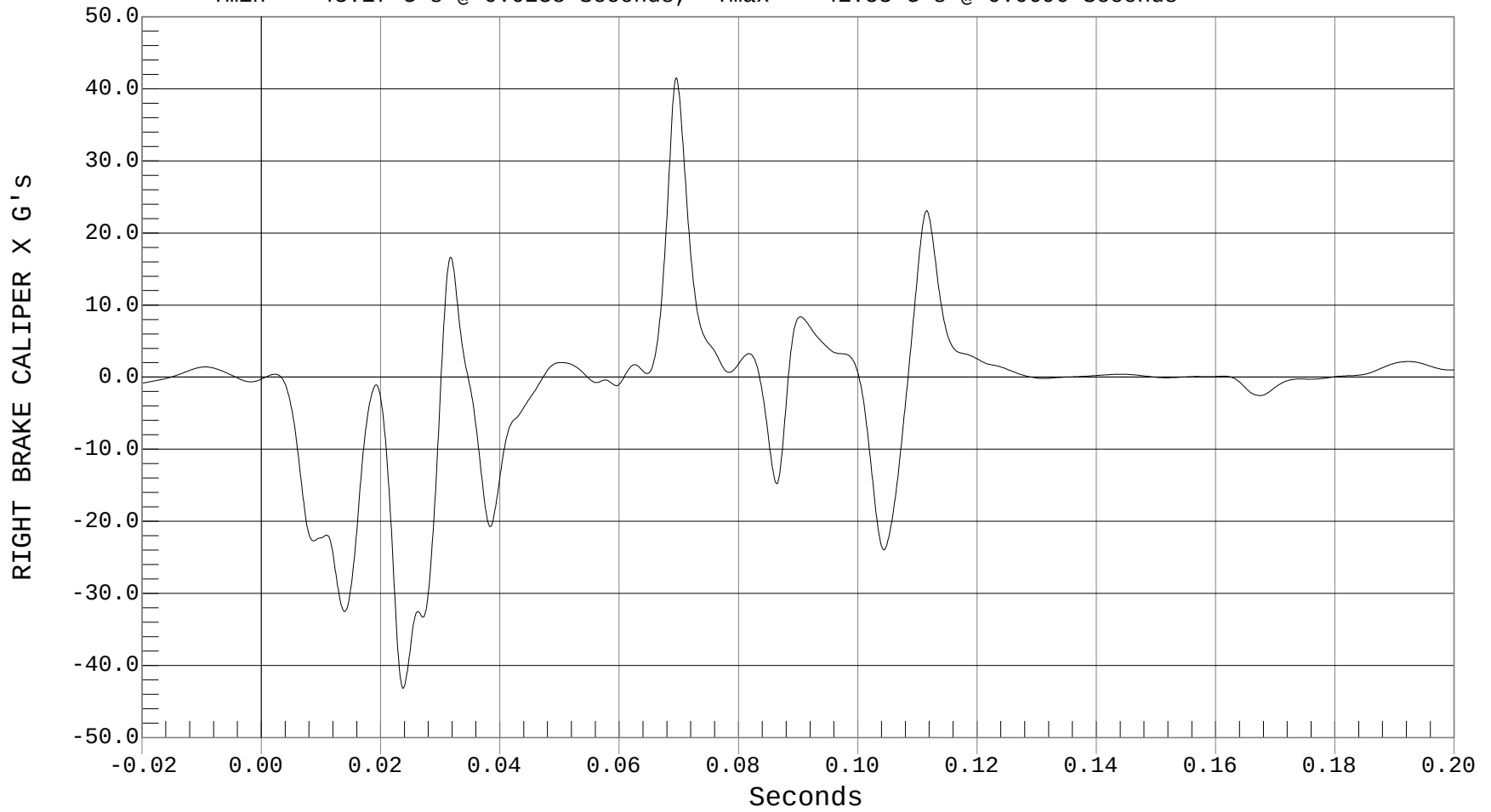
RIGHT BRAKE CALIPER X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 60

— 1 RIGHT BRAKE CALIPER X, b00095AF.A60

Ymin = -43.17 G's @ 0.0238 Seconds, Ymax = 41.53 G's @ 0.0696 Seconds





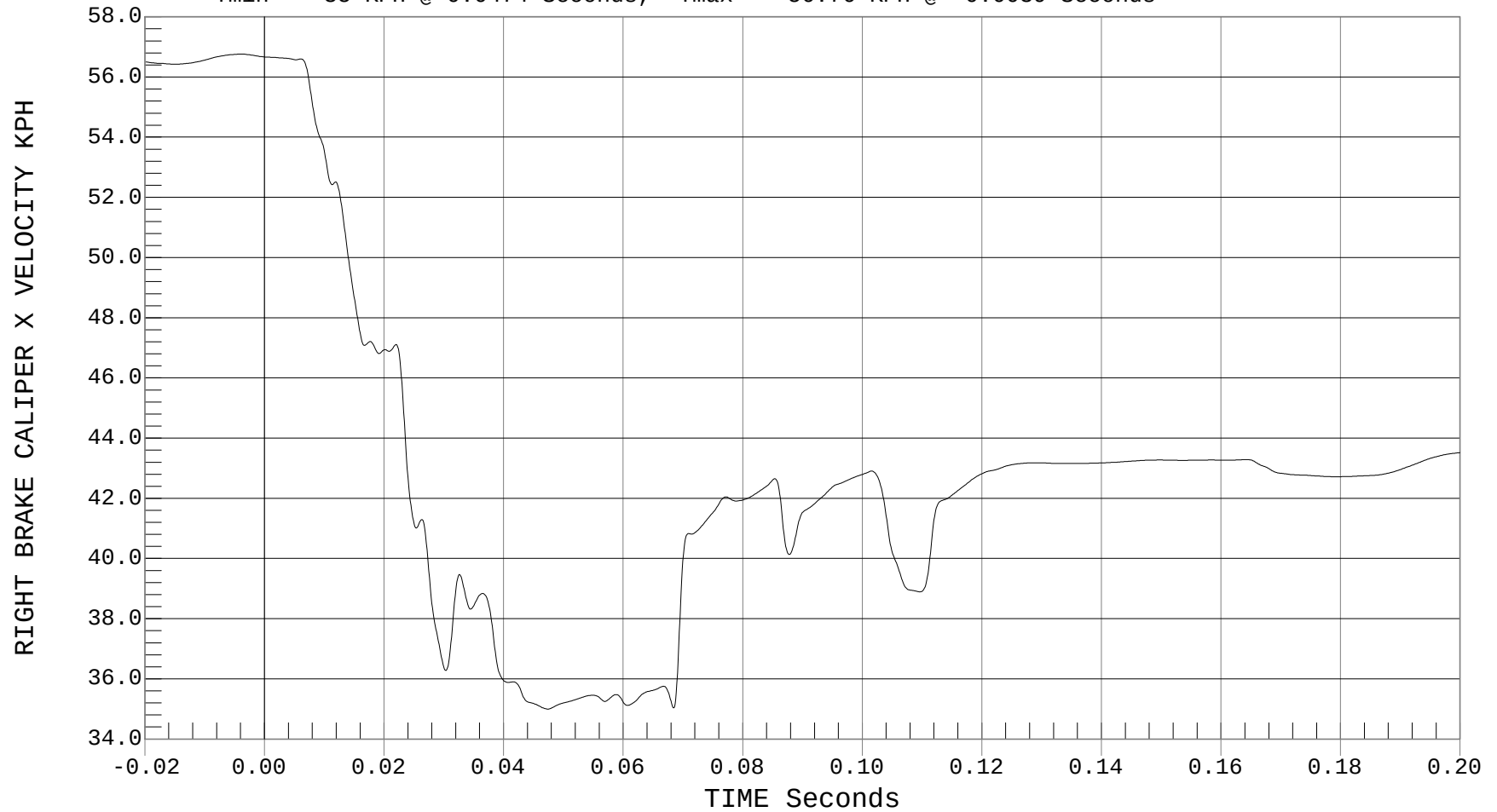
RIGHT BRAKE CALIPER X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 RIGHT BRAKE CALIPER X VELOCITY, b00095AI.V60

Ymin = 35 KPH @ 0.0474 Seconds, Ymax = 56.76 KPH @ -0.0039 Seconds





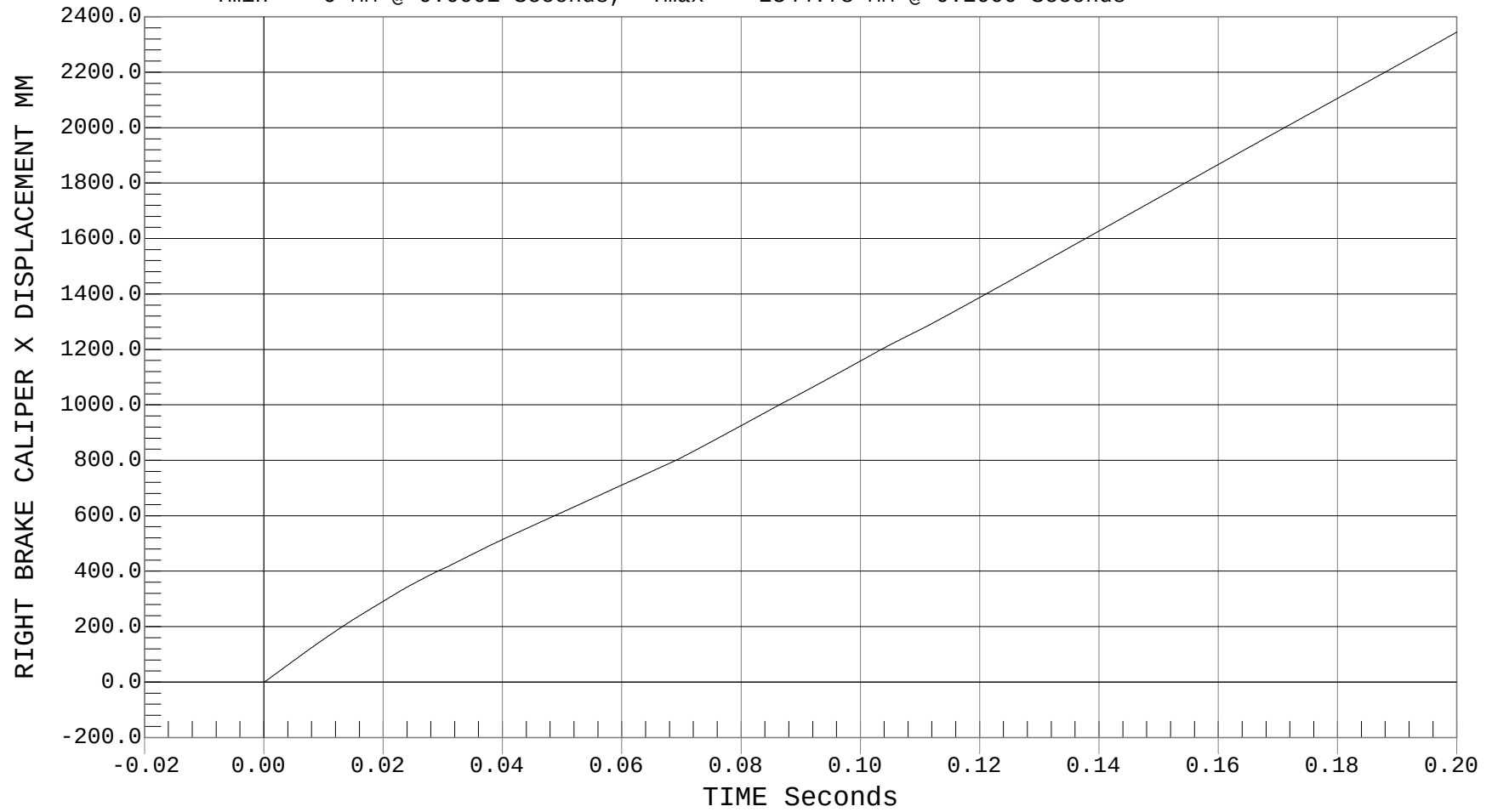
RIGHT BRAKE CALIPER X DISPLACEMENT

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 RIGHT BRAKE CALIPER X DISPLACEMENT, b00095AI.D60

Ymin = 0 MM @ 0.0001 Seconds, Ymax = 2344.78 MM @ 0.2000 Seconds





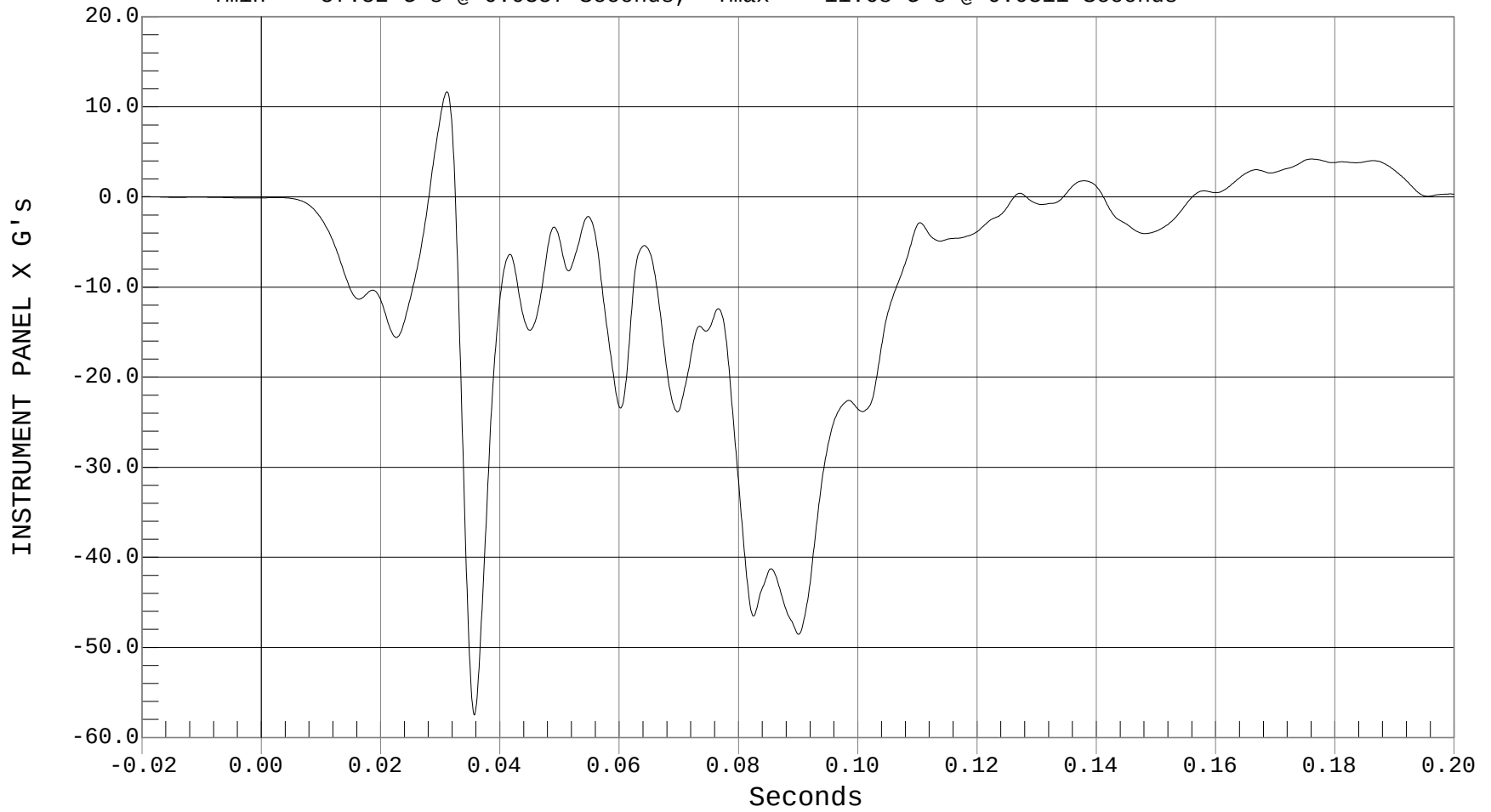
INSTRUMENT PANEL X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 60

— 1 INSTRUMENT PANEL X, b00095AF.A57

Ymin = -57.52 G's @ 0.0357 Seconds, Ymax = 11.68 G's @ 0.0311 Seconds





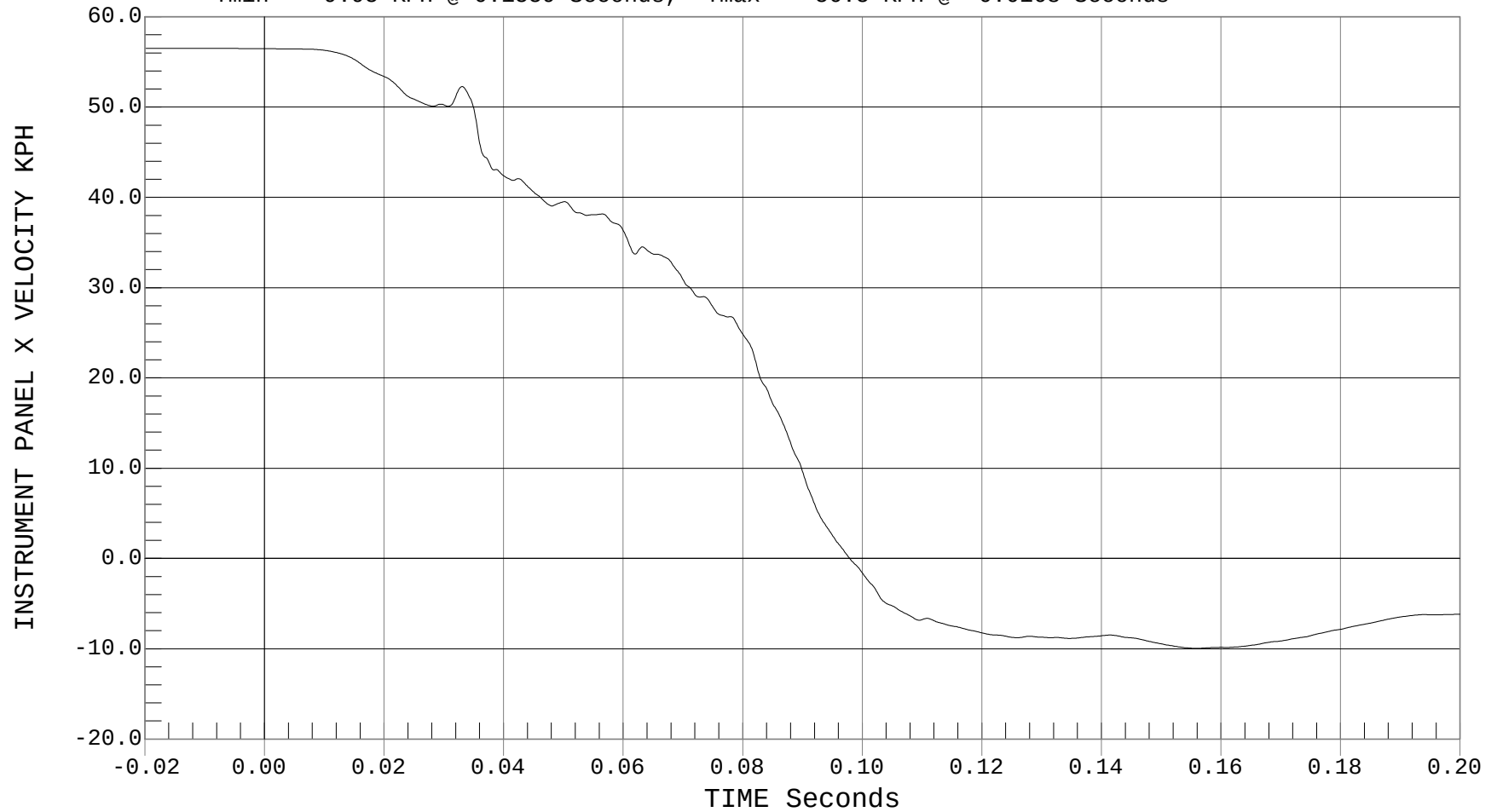
INSTRUMENT PANEL X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 INSTRUMENT PANEL X VELOCITY, b00095AI.V57

Ymin = -9.95 KPH @ 0.1559 Seconds, Ymax = 56.5 KPH @ -0.0168 Seconds





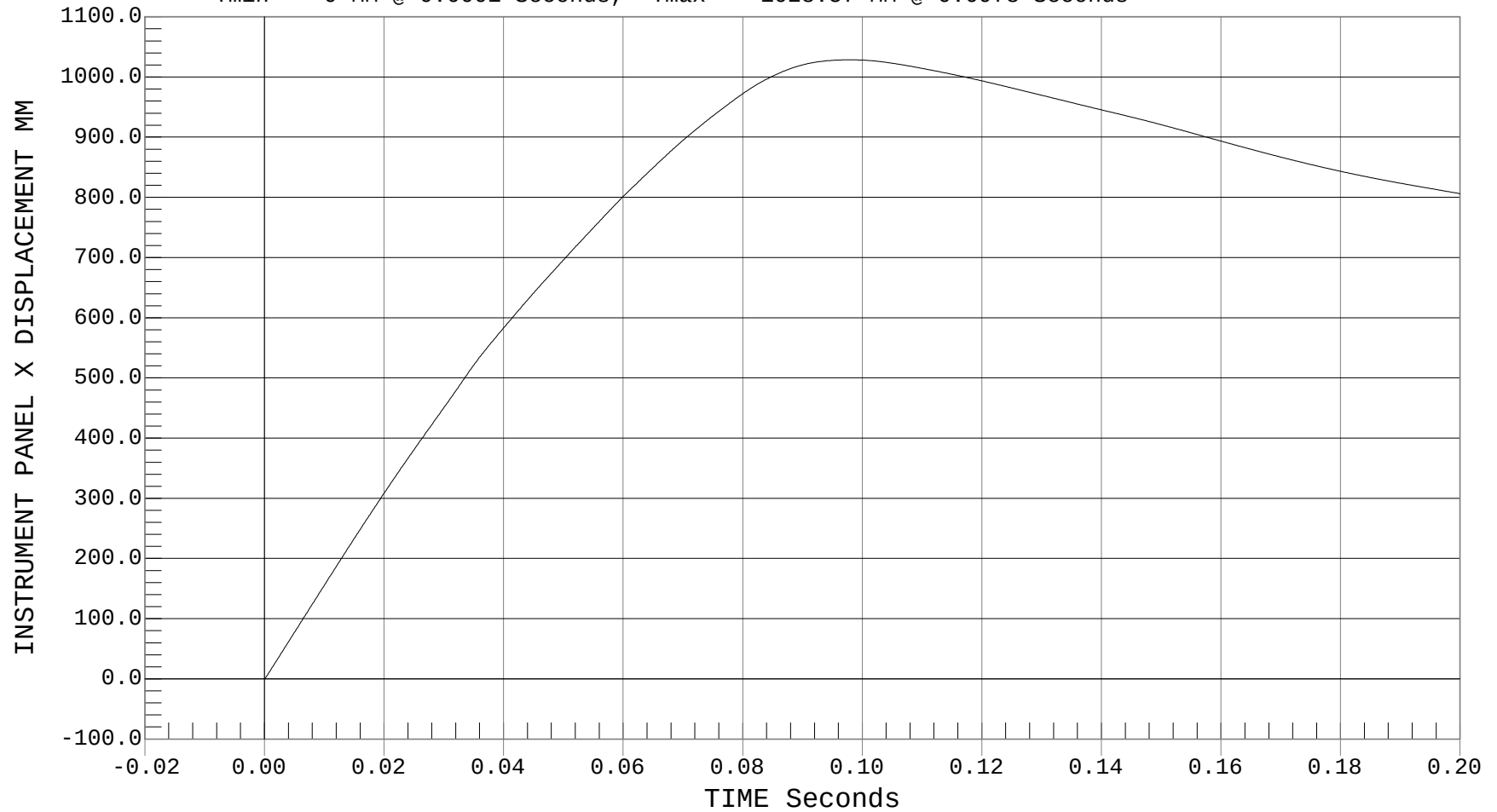
INSTRUMENT PANEL X DISPLACEMENT

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 INSTRUMENT PANEL X DISPLACEMENT, b00095AI.D57

Ymin = 0 MM @ 0.0001 Seconds, Ymax = 1028.57 MM @ 0.0978 Seconds





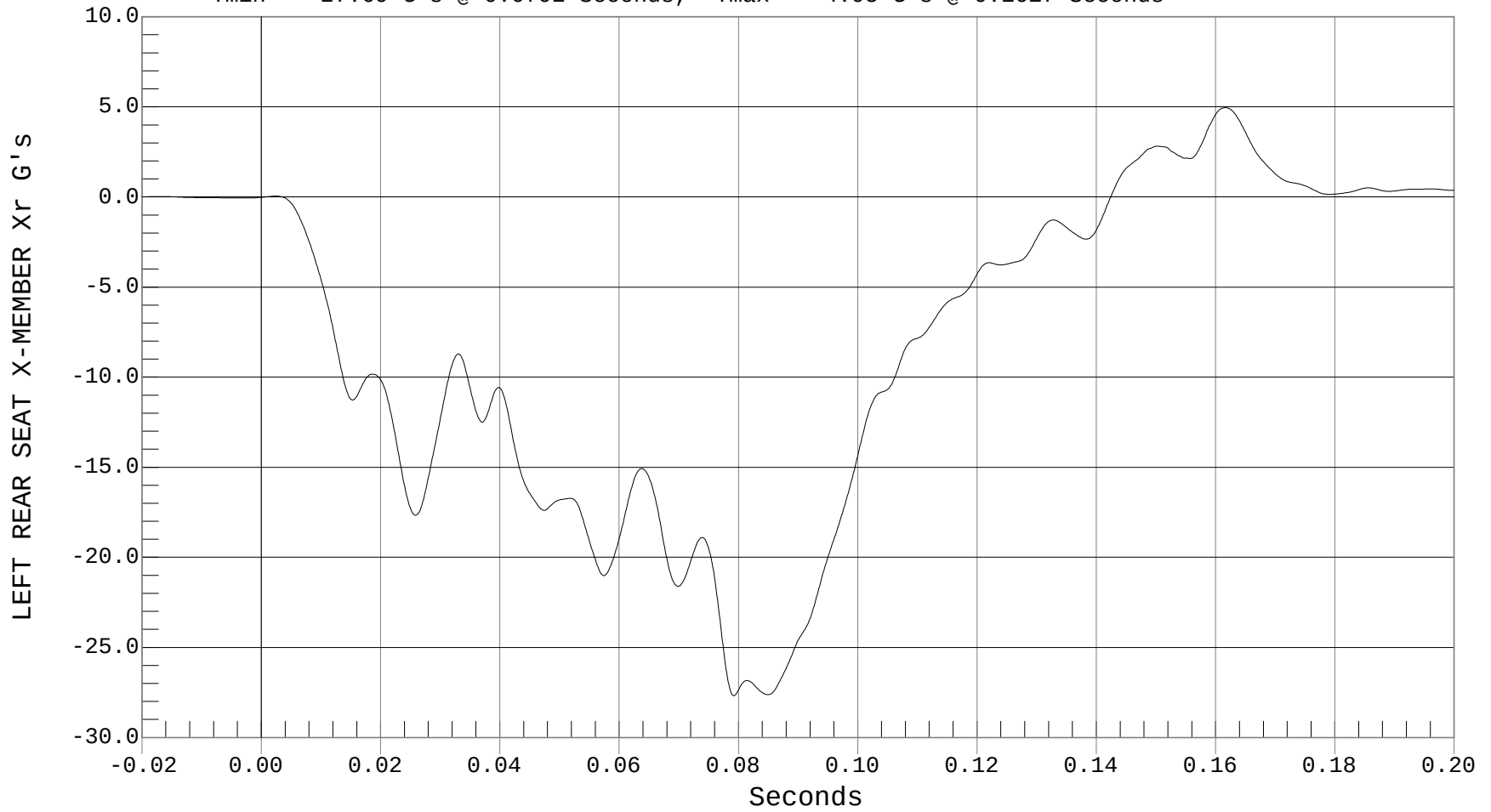
LEFT REAR SEAT CROSSMEMBER REDUNDANT X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 60

— 1 LEFT REAR SEAT X-MEMBER Xr, c00095AF.A03

Ymin = -27.69 G's @ 0.0792 Seconds, Ymax = 4.95 G's @ 0.1617 Seconds





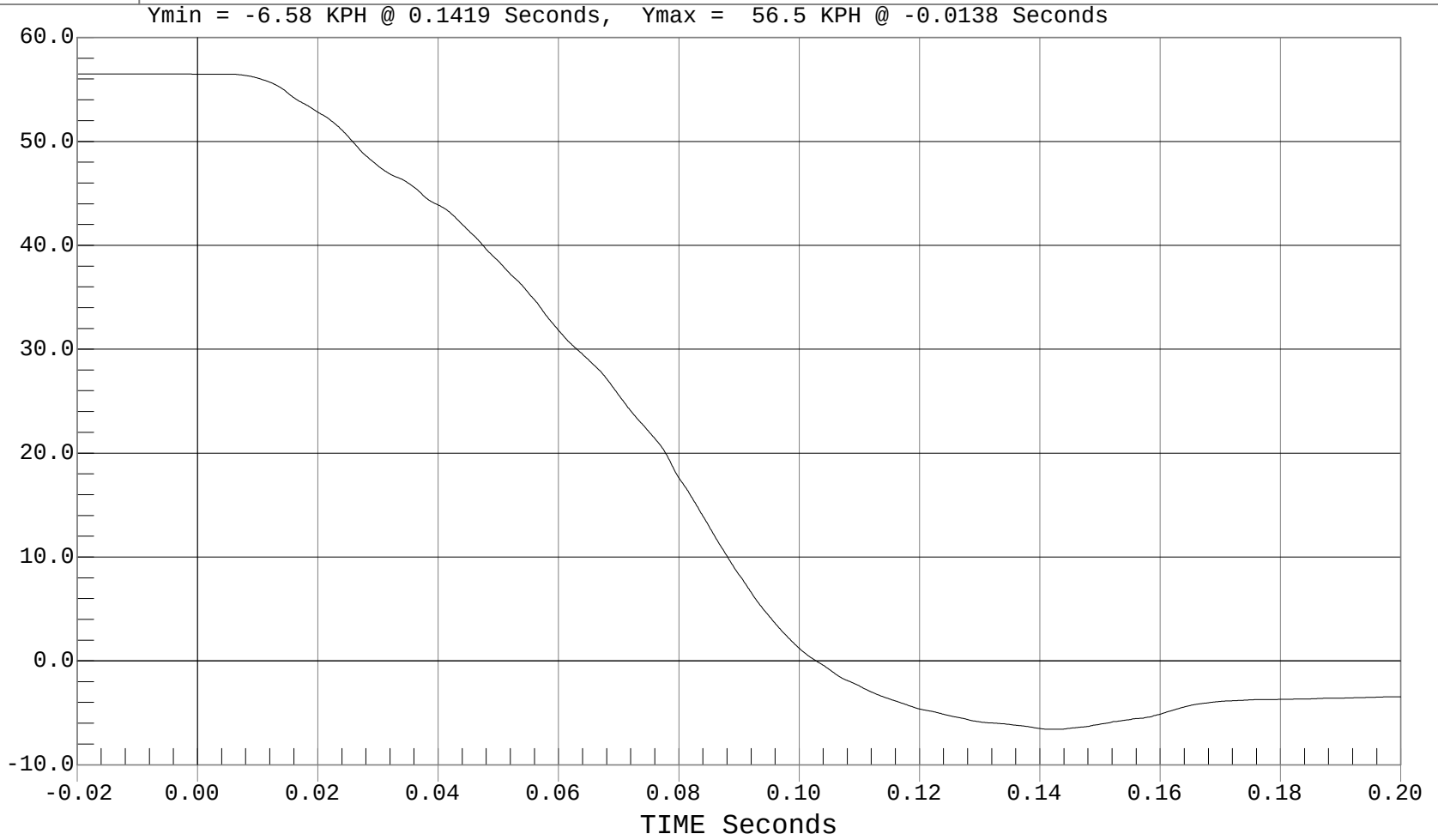
LEFT REAR SEAT CROSSMEMBER REDUNDANT X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 LEFT REAR SEAT CROSSMEMBER REDUNDANT X VELOCITY, c00095AI.V03

LEFT REAR SEAT CROSSMEMBER REDUNDANT X VELOCITY KF





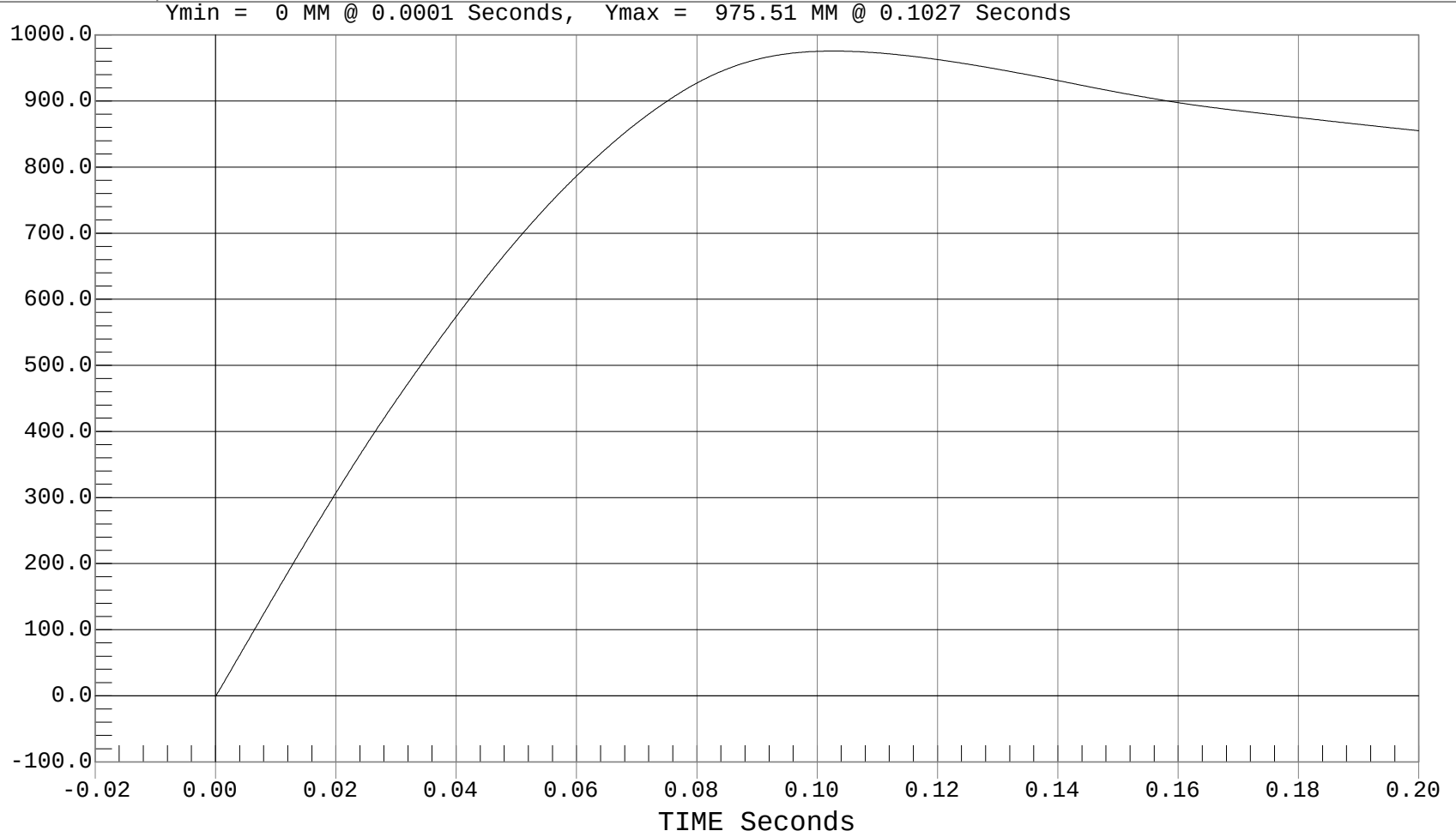
LEFT REAR SEAT CROSSMEMBER REDUNDANT X DISPLACEMENT

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 LEFT REAR SEAT CROSSMEMBER REDUNDANT X DISPLACEMENT, c00095AI.D03

LEFT REAR SEAT CROSSMEMBER REDUNDANT X DISPLACEMENT





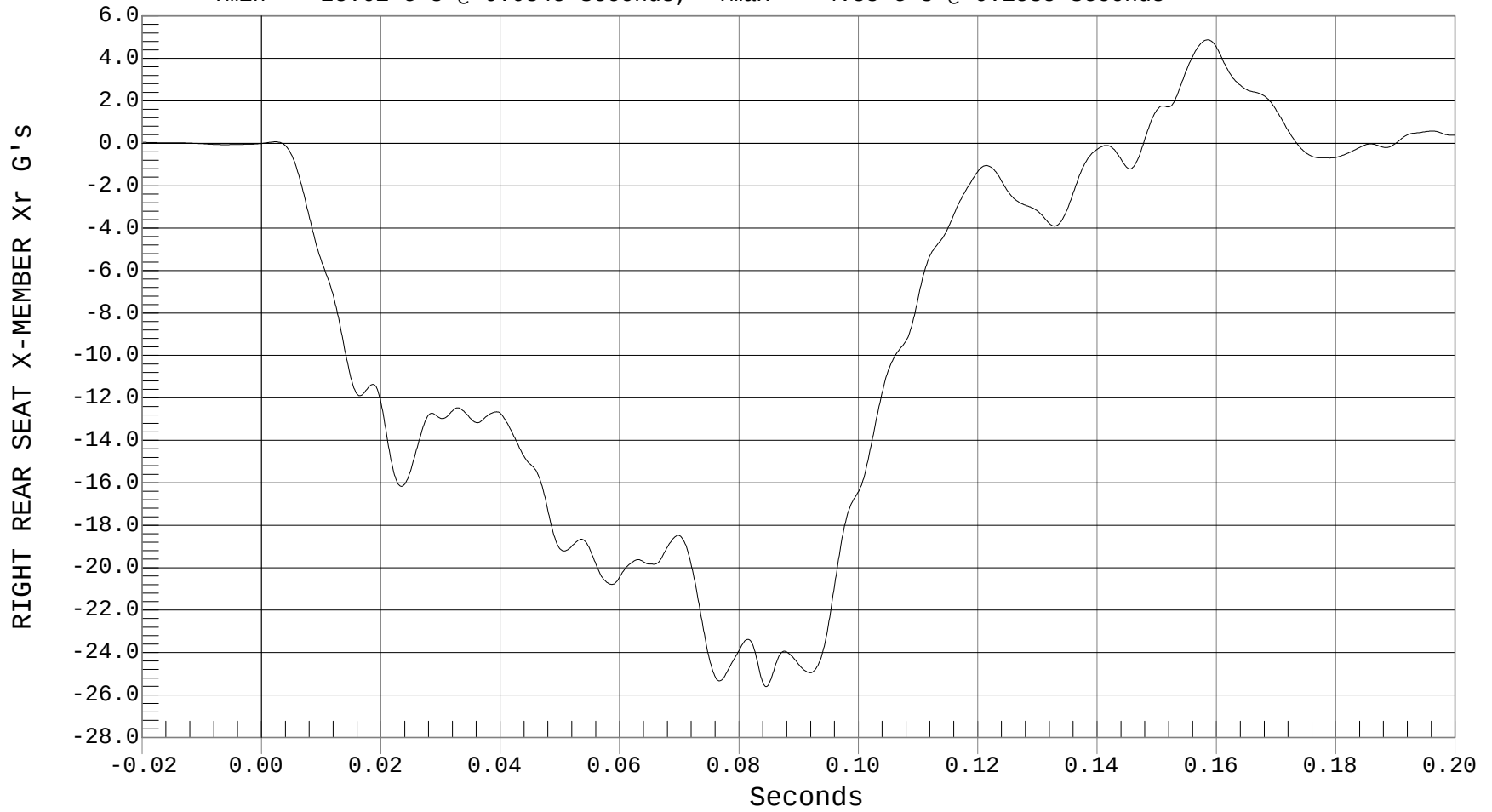
RIGHT REAR SEAT CROSSMEMBER REDUNDANT X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 60

— 1 RIGHT REAR SEAT X-MEMBER Xr, c00095AF.A02

Ymin = -25.61 G's @ 0.0845 Seconds, Ymax = 4.88 G's @ 0.1585 Seconds





RIGHT REAR SEAT CROSSMEMBER REDUNDANT X VELOCITY

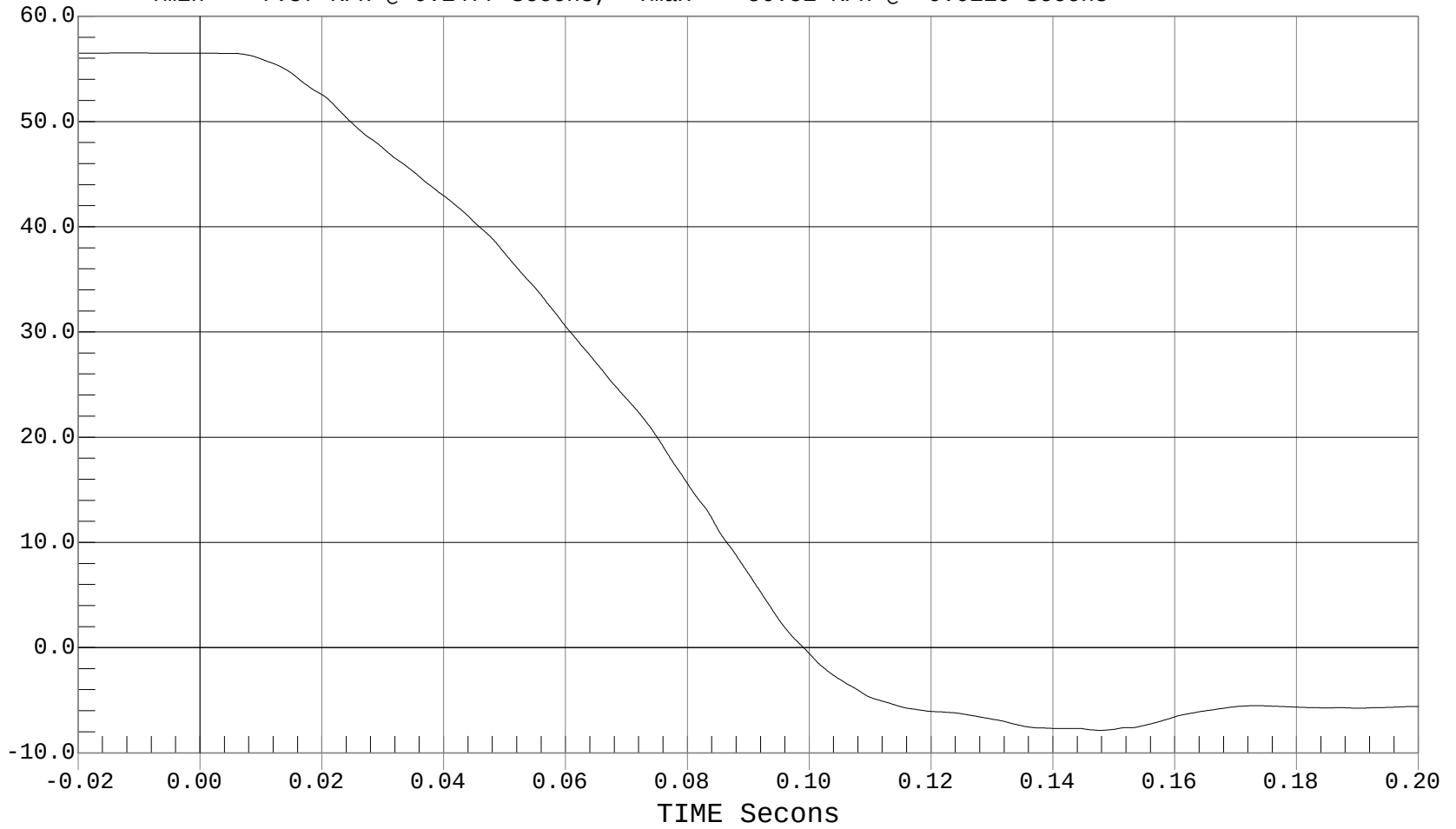
Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 RIGHT REAR SEAT CROSSMEMBER REDUNDANT X VELOCITY, c00095AI.V02

RIGHT REAR SEAT CROSSMEMBER REDUNDANT X VELOCITY K

Ymin = -7.87 KPH @ 0.1477 Secons, Ymax = 56.51 KPH @ -0.0119 Secons





RIGHT REAR SEAT CROSSMEMBER REDUNDANT X DISPLACEMENT

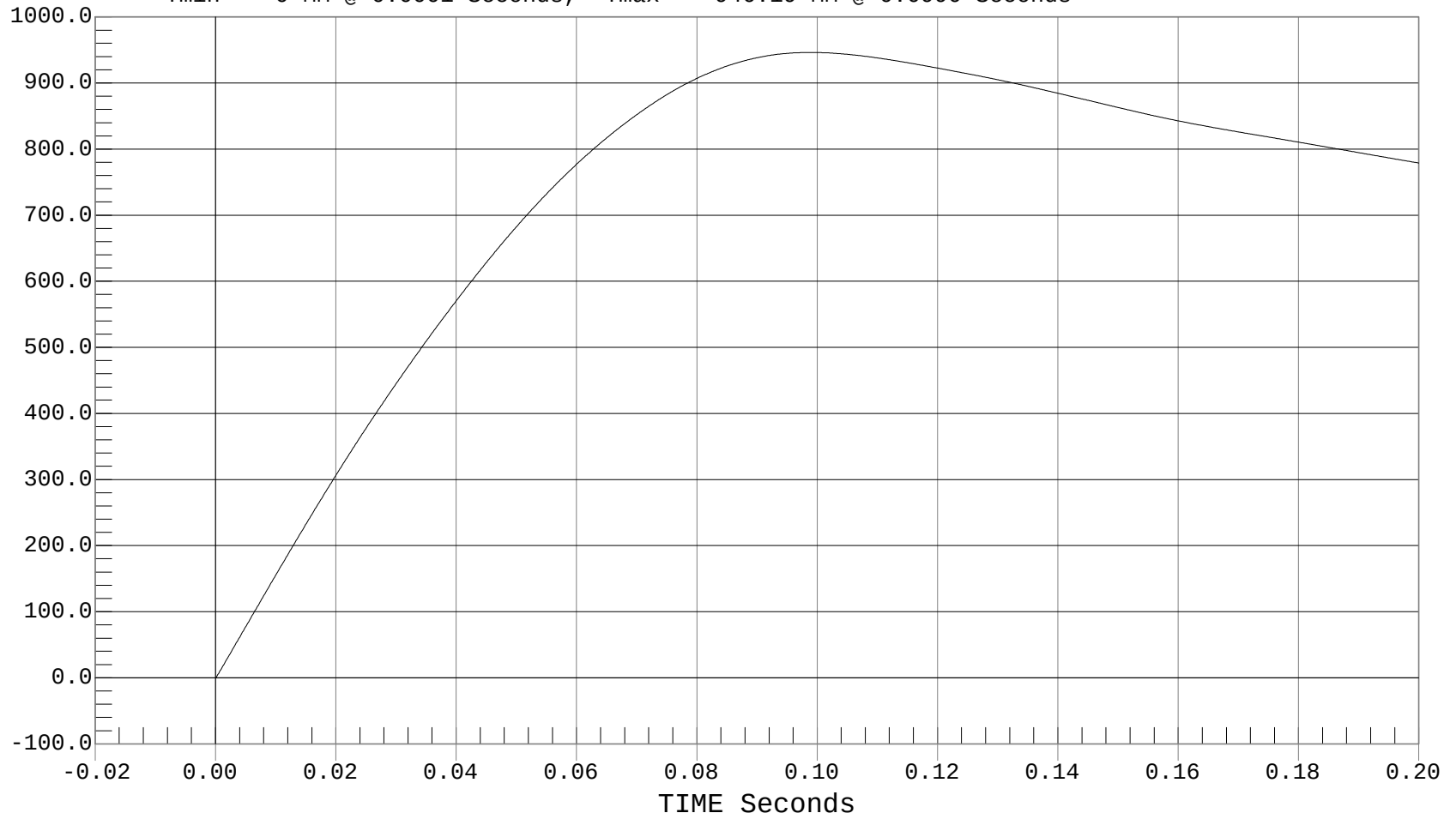
Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 LINCON TOWN CAR 4 DOOR SEDAN
Other Info:

Test Date: 11-09-00
Speed: 35.1 MPH, 56.5 KPH
Filter Class: 180

— 1 RIGHT REAR SEAT CROSSMEMBER REDUNDANT X DISPLACEMENT, c00095AI.D02

Ymin = 0 MM @ 0.0001 Seconds, Ymax = 946.19 MM @ 0.0990 Seconds

RIGHT REAR SEAT CROSSMEMBER REDUNDANT X DISPLACEMENT



APPENDIX C
DUMMY CONFIGURATION & PERFORMANCE VERIFICATION DATA

CERTIFICATION DATA

Dummy Serial Number: 066

Calibration Test Results Summary

Dummy Serial Number: 066

Pre-Test Calibration

External Dimensions:	The dummy passed all external dimension requirements.
Head Drop Test:	The head passed all drop test requirements.
Neck Flexion Test:	The neck passed all flexion test requirements.
Neck Extension Test:	The neck passed all extension test requirements.
Thorax Impact Test:	The thorax passed all impact test requirements.
Knee Impact Tests:	Both knees passed all impact test requirements.
Hip-Femur Flexion Tests:	Both femurs passed all flexion test requirements.

HYBRID III DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

Dummy Serial Number: 066

Date of Verification: 11/8/00

Test Number: D00140

DESCRIPTION	SPECIFICATION	TEST RESULTS
Temperature (°F)	69 – 72	70°
Relative Humidity	10 – 70	33%
AA - Location for Chest Circumference	16.9" – 17.1"	17.0
BB - Location for Waist Circumference	8.9" – 9.1"	9.0
A - Total Sitting Height	34.6" – 35.0"	34.7
B – Shoulder Pivot Height	19.9" – 20.5"	20.2
C – H Point Height	3.3" – 3.5"	3.4
D – H Point from Seat Back	5.3" – 5.5"	5.5
E – Shoulder Pivot From Backline	3.3" – 3.7"	3.5
F – Thigh Clearance	5.5" – 6.1"	5.7
G – Back of Elbow to Wrist Pivot	11.4" – 12.0"	11.6
H – Skull Cap Skin to Backline	1.6" – 1.8"	1.7
I – Shoulder Elbow Length	13.0" – 13.6"	13.3
J – Elbow Rest Height	7.5" – 8.3"	7.6
K – Buttock Knee Length	22.8" – 23.8"	23.6
L – Popliteal Height	16.9" – 17.9"	17.4
M – Knee Pivot Height	19.1 – 19.9"	19.5
N – Buttock Popliteal Length	17.8" – 18.8"	18.4
O – Chest Depth at 3 rd Rib	8.4" – 9.0"	8.7
P – Foot Length	9.9" – 10.5"	10.4
V – Shoulder Breadth	16.6" – 17.2"	17.0
W – Foot Breadth	3.5" – 4.2"	4.0
Y – Chest Circumference	38.2" – 39.4"	39.2
Z – Waist Circumference	32.9" – 34.1"	33.8

Technician: _____

Approved By: _____

MGA RESEARCH CORPORATION
HEAD DROP TEST
HYBRID III

Date: 11/6/00
Dummy Serial Number: 066
Test Number: D001401

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°F)	66 – 78	70°
Relative Humidity (%)	10 – 70	33%
Peak Resultant Acceleration	225 – 275 g's	268
Peak Lateral Acceleration	± 15 g's max.	10
Is Acceleration Curve Unimodal	Within 10% of peak	Yes

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____



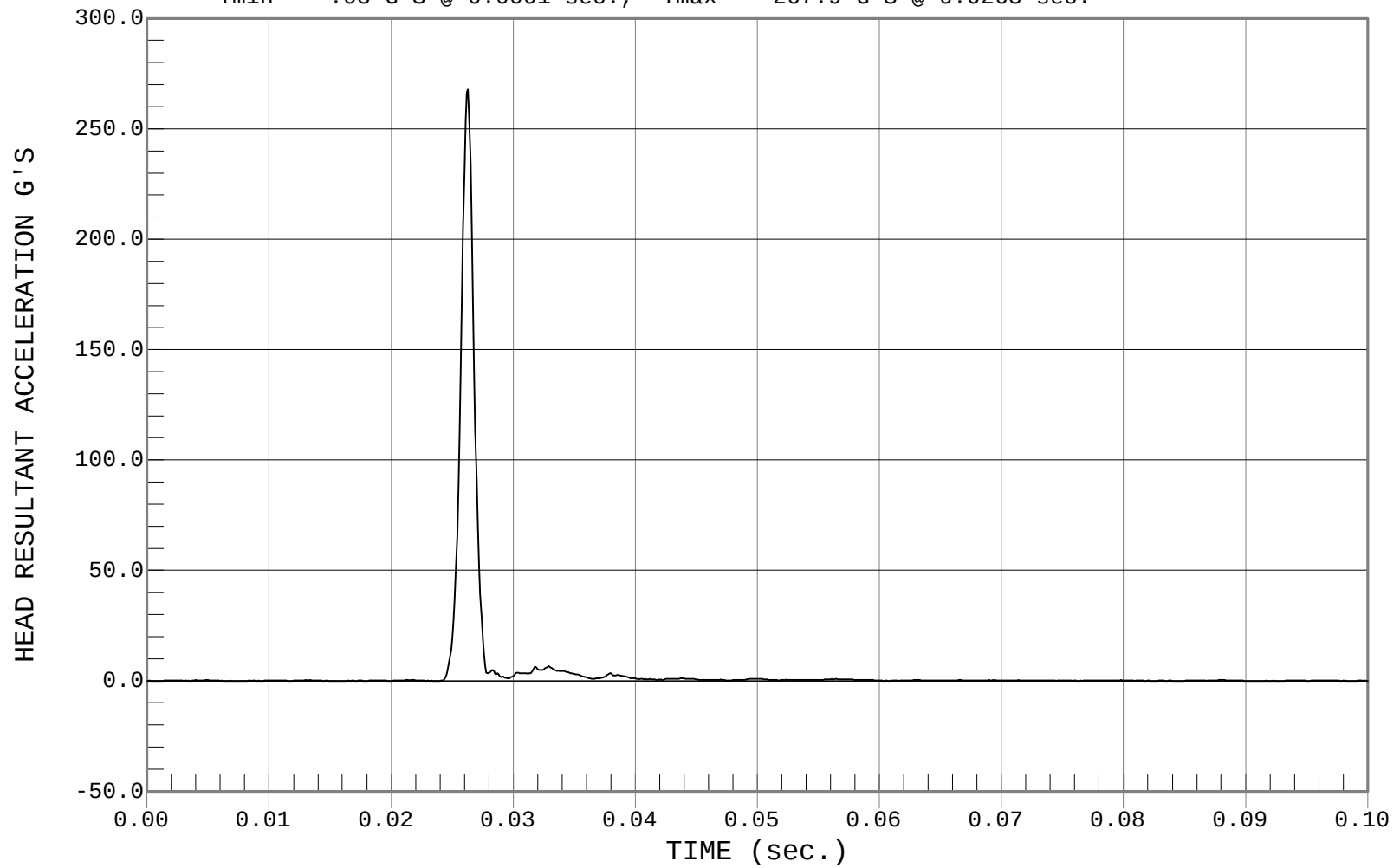
PEAK RESULTANT ACCELERATION

Test Desc.: Dummy Calibration - Head Drop
Component: Dummy #066

Test Date: 11-06-00
Speed: 0.00 FT/SEC, 0.00 M/SEC

— 1 HEAD RESULTANT ACCELERATION, D00401av.a01

Ymin = .03 G'S @ 0.0001 sec., Ymax = 267.9 G'S @ 0.0263 sec.





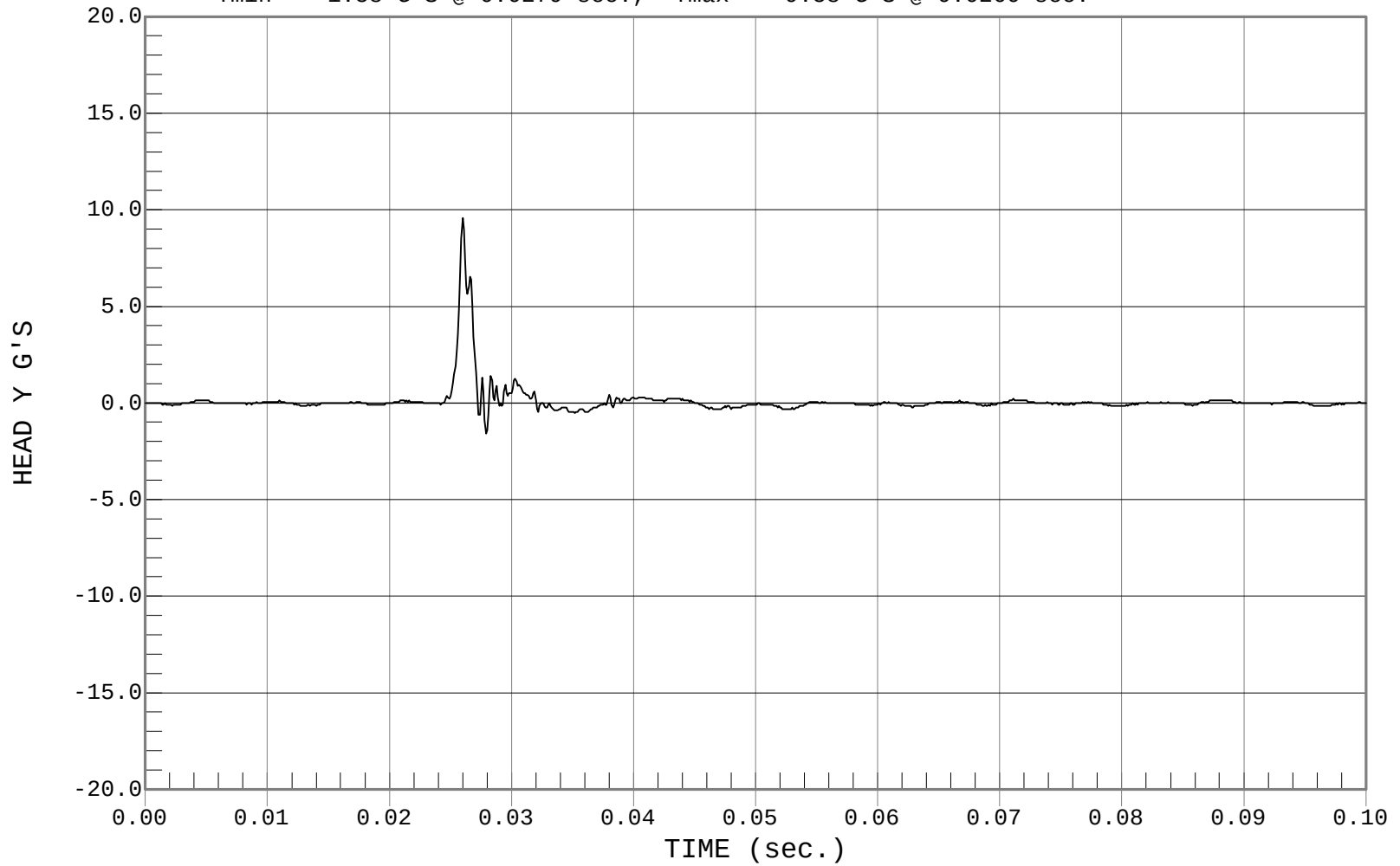
PEAK LATERAL ACCELARATION

Test Desc.: Dummy Calibration - Head Drop
Component: Dummy #066

Test Date: 11-06-00
Speed: 0.00 FT/SEC, 0.00 M/SEC

1 HEAD Y, D00401AR.A02

Ymin = -1.58 G'S @ 0.0279 sec., Ymax = 9.58 G'S @ 0.0260 sec.



MGA RESEARCH CORPORATION
NECK FLEXION TEST
HYBRID III

Date: 11/7/00
Dummy Serial Number: 066
Test Number: D001402

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature (°F)		69 - 72	70°
Relative Humidity (%)		10 – 70	39%
Pendulum Speed		22.6 – 23.4 ft/sec	23.1
Pendulum Deceleration	10 ms	22.50 – 27.50 g	24.84
	20 ms	17.60 – 22.60 g	20.24
	30 ms	12.50 – 18.50 g	15.08
Max. Pendulum G Above 30 ms		29.0 g max.	15.1
Deceleration – Time Curve Decay Time to 5 G		34 – 42 ms	35
D Plane Rotation	Max.	64 – 78 deg.	67
	Time	57.- 64 ms	58
Rotation Angle – Time Curve Decay Time to Zero		113 – 128 ms	113
Moment About Occipital Condyle	Max.	65 – 80 ft-lbf	72
	Time	47 – 58 ms	49
Positive Moment – Time Curve Decay Time to Zero		97 – 107 ms	98

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____



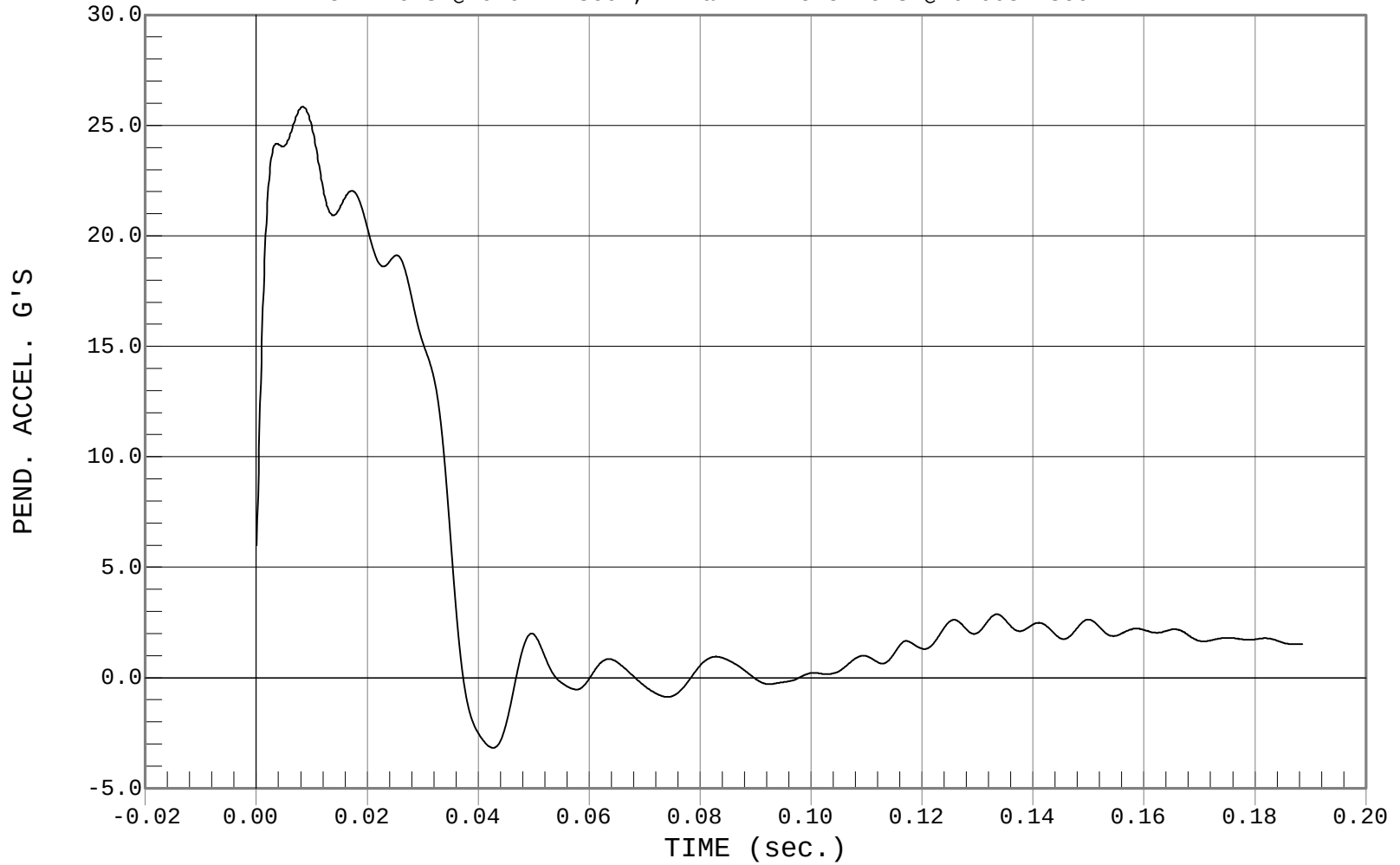
PENDULUM DECELERATION

Test Desc.: Dummy Calibration - Neck Flexion
Component: Dummy #066

Test Date: 11-07-00
Speed: 23.12 FT/SEC, 7.05 M/SEC

1 PEND. ACCEL., D00402AF.A04

Ymin = -3.17 G'S @ 0.0427 sec., Ymax = 25.84 G'S @ 0.0084 sec.





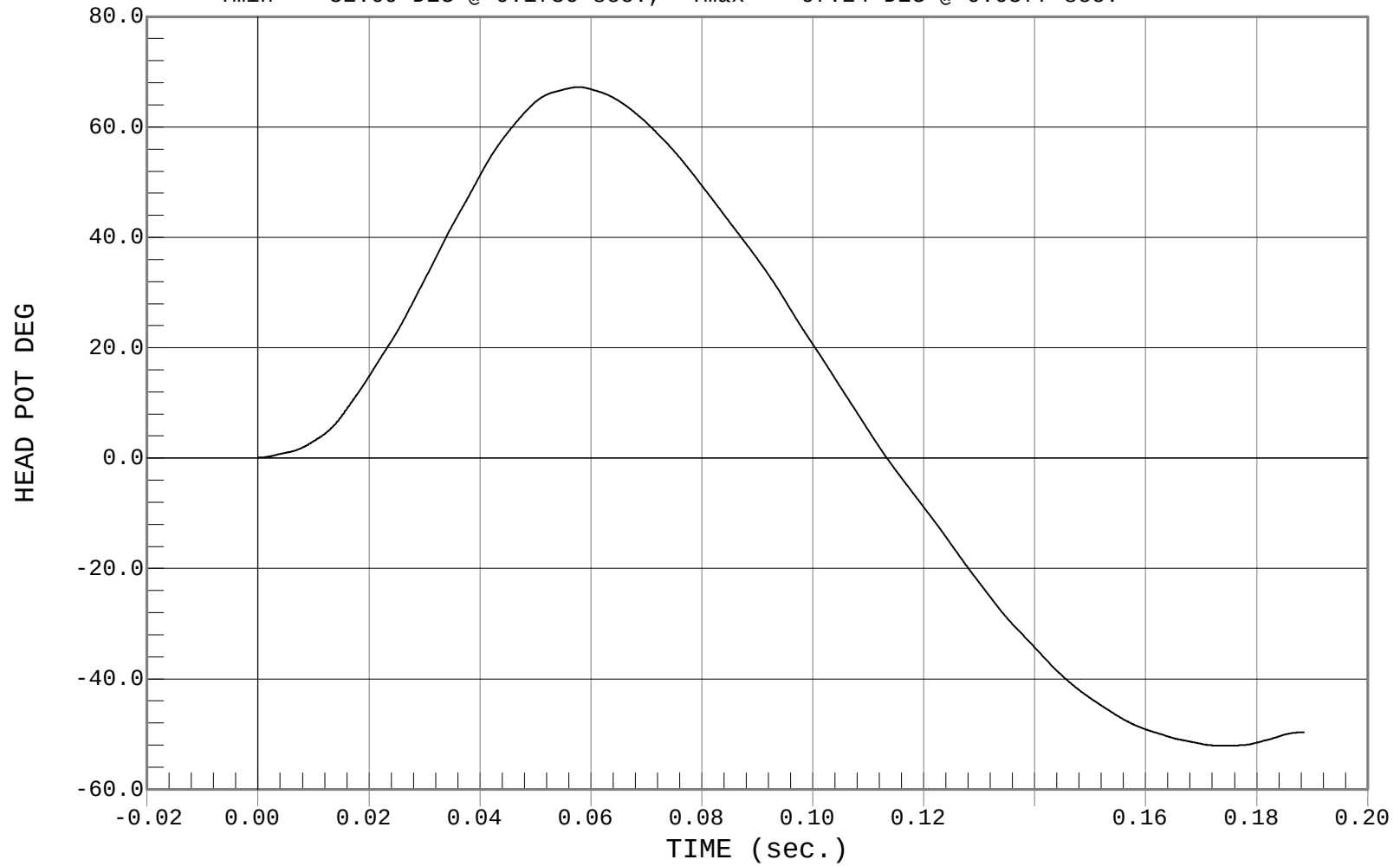
NECK ROTATION

Test Desc.: Dummy Calibration - Neck Flexion
Component: Dummy #066

Test Date: 11-07-00
Speed: 23.12 FT/SEC, 7.05 M/SEC

— 1 HEAD POT, D00402DU.D05

Ymin = -52.09 DEG @ 0.1736 sec., Ymax = 67.24 DEG @ 0.0577 sec.





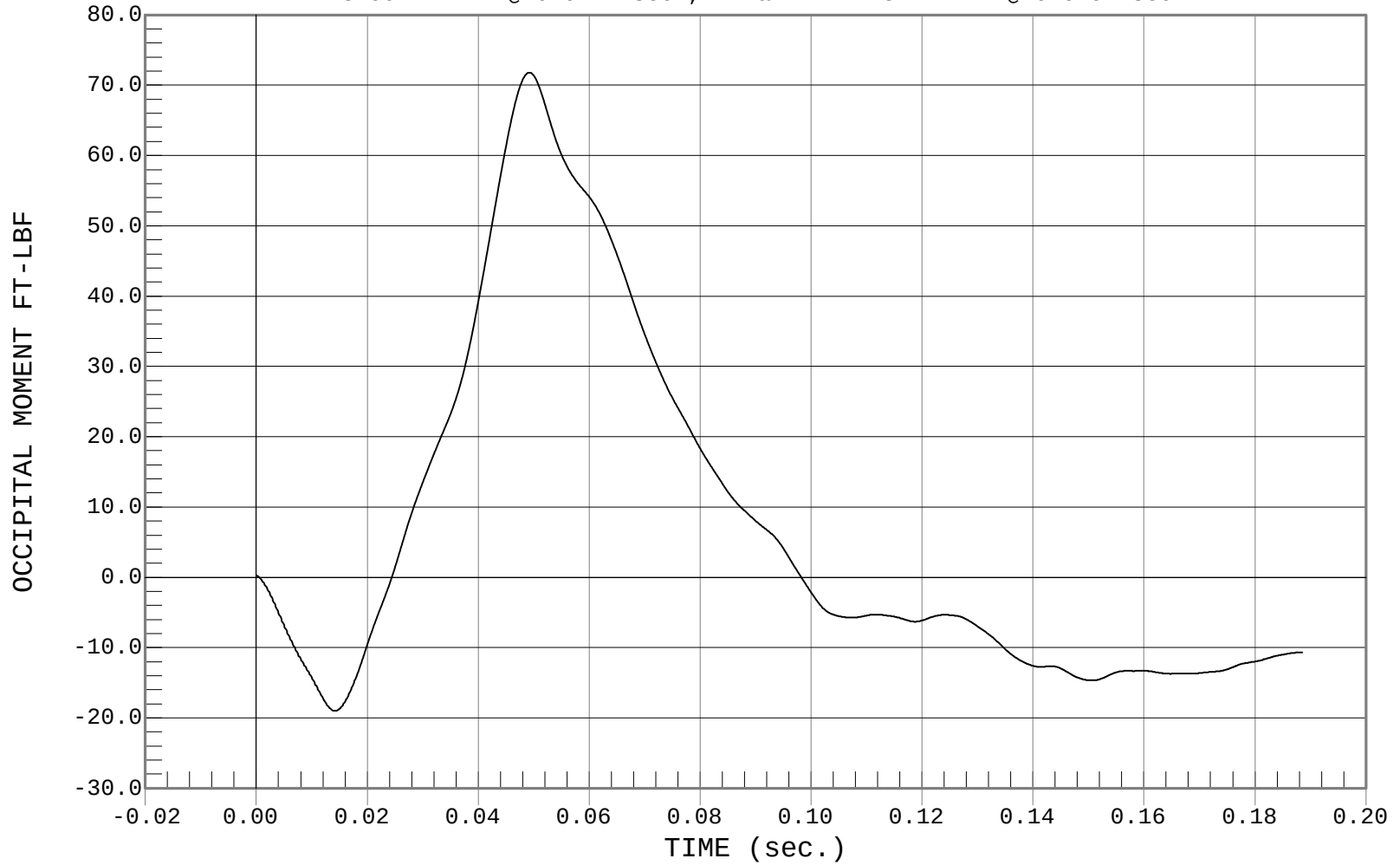
OCCIPITAL MOMENT

Test Desc.: Dummy Calibration - Neck Flexion
Component: Dummy #066

Test Date: 11-07-00
Speed: 23.12 FT/SEC, 7.05 M/SEC

1 OCCIPITAL MOMENT, D00402NK.MNT

Ymin = -18.99 FT-LBF @ 0.0142 sec., Ymax = 71.8 FT-LBF @ 0.0492 sec.



MGA RESEARCH CORPORATION
NECK EXTENSION TEST
HYBRID III

Date: 11/7/00
Dummy Serial Number: 066
Test Number: D001403

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature (°F)		69 – 72	70°
Relative Humidity (%)		10 – 70	39%
Pendulum Speed		19.50 – 20.30 ft/sec	20.09
Pendulum Deceleration	10 msec	17.20 – 21.20 g	19.13
	20 msec	14.00 – 19.00 g	16.92
	30 msec	11.00 – 16.00 g	13.92
Max. Pendulum G Above 30 ms		22 g max.	14
Deceleration – Time Curve Decay Time to 5 g		38 – 46 ms	38
D Plane Rotation	Max.	81 – 106 deg.	95
	Time	72 – 82 ms	76
Rotation Angle – Time Curve Decay Time to Zero		147 – 174 ms	154
Moment About Occipital Condyle	Min.	-59.0/-39.0 ft-lbf	-48.3
	Time	65 – 79 ms	71
Positive Moment – Time Curve Decay Time to Zero		120 – 148 ms	141

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____



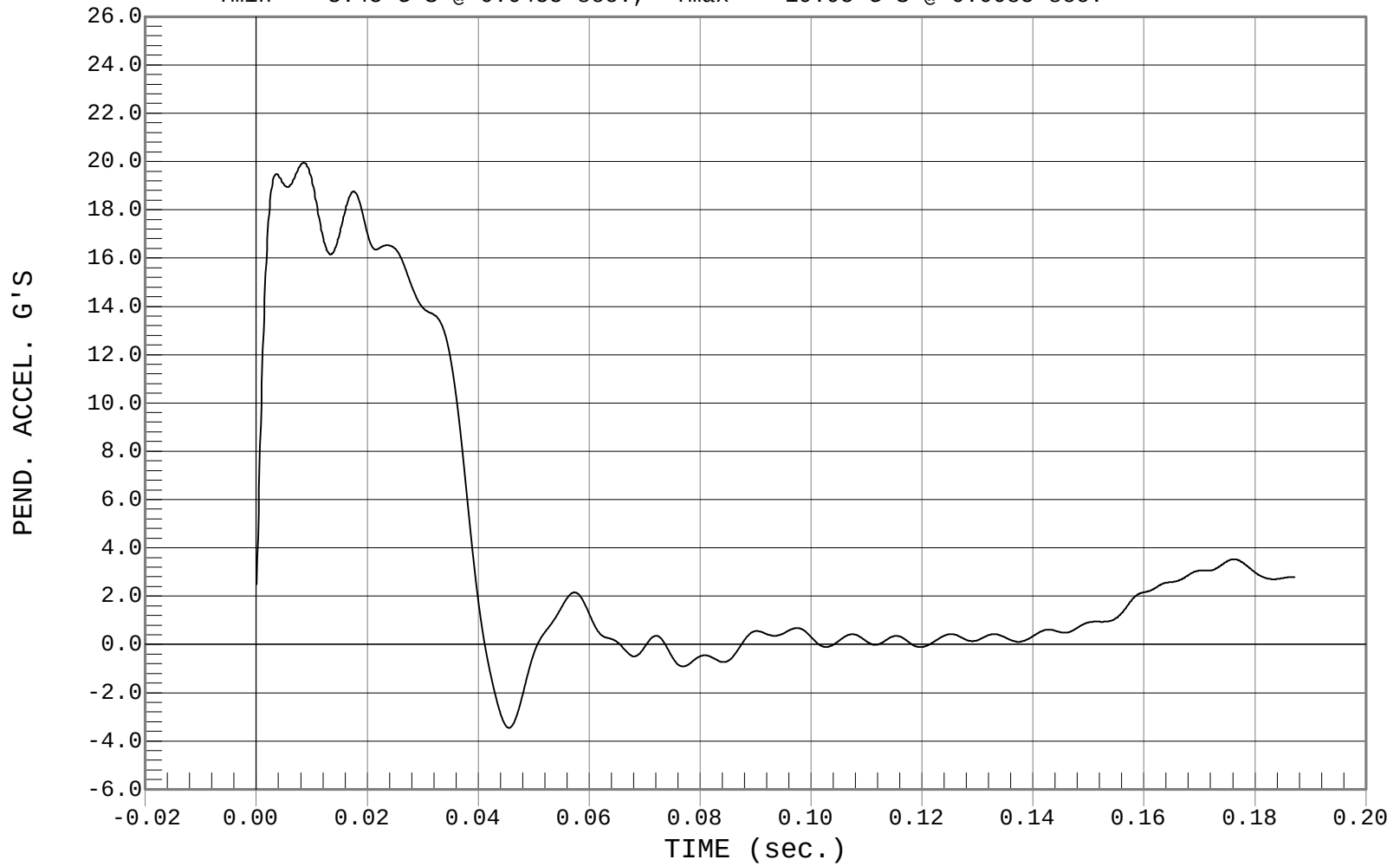
PENDULUM DECELERATION

Test Desc.: Dummy Calibration - Neck Extension
Component: Dummy #066

Test Date: 11-07-00
Speed: 20.09 FT/SEC, 6.12 M/SEC

1 PEND. ACCEL., D00403AF.A04

Ymin = -3.45 G'S @ 0.0455 sec., Ymax = 19.95 G'S @ 0.0085 sec.





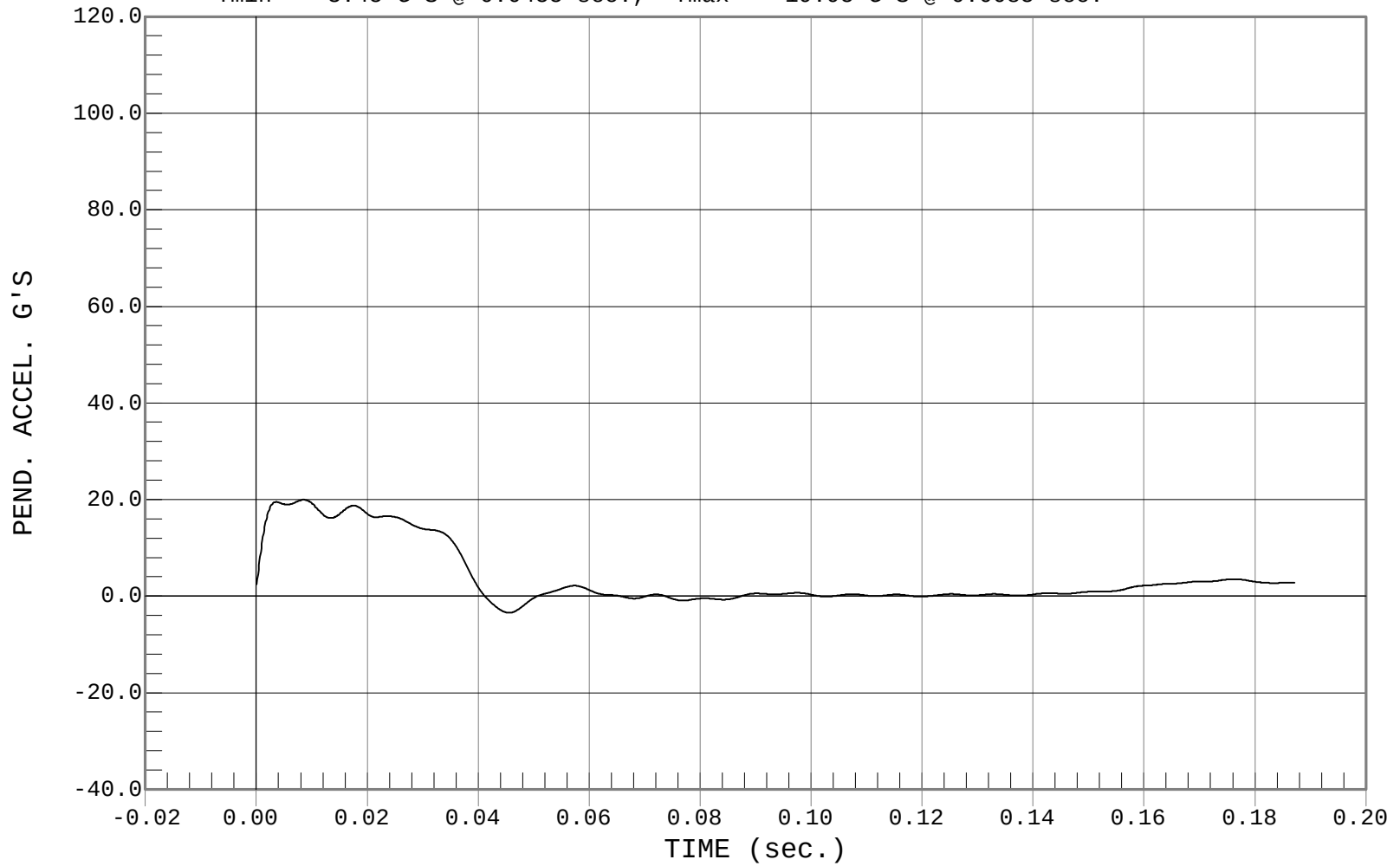
NECK ROTATION

Test Desc.: Dummy Calibration - Neck Extension
Component: Dummy #066

Test Date: 11-07-00
Speed: 20.09 FT/SEC, 6.12 M/SEC

1 PEND. ACCEL., D00403DM.D05

Ymin = -3.45 G'S @ 0.0455 sec., Ymax = 19.95 G'S @ 0.0085 sec.





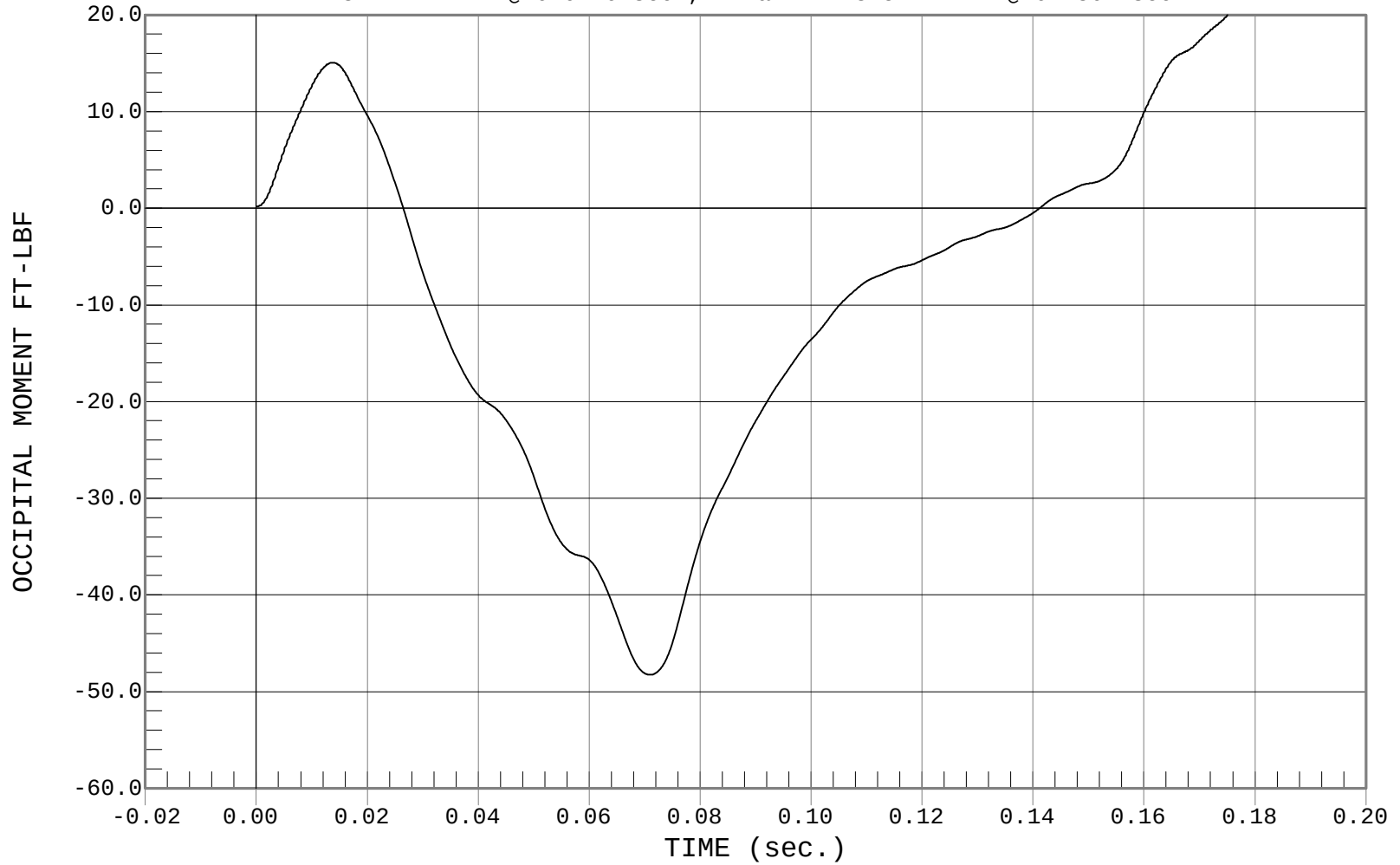
OCCIPITAL MOMENT

Test Desc.: Dummy Calibration - Neck Extension
Component: Dummy #066

Test Date: 11-07-00
Speed: 20.09 FT/SEC, 6.12 M/SEC

1 OCCIPITAL MOMENT, D00403NK.MNT

Ymin = -48.27 FT-LBF @ 0.0710 sec., Ymax = 23.5 FT-LBF @ 0.1864 sec.



MGA RESEARCH CORPORATION
THORAX IMPACT TEST
HYBRID III

Date: 1/8/00
Dummy Serial Number: 066
Test Number: D001404

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°F)	69 – 72	70°
Relative Humidity (%)	10 – 70%	33%
Probe Speed	21.6 – 22.4 ft/sec	22.2
Peak Deflection	2.50 – 2.86 in	2.66
Peak Resistive Force	1160 – 1325 lbs	1311
Internal Hysteresis	69 – 85%	75%

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____



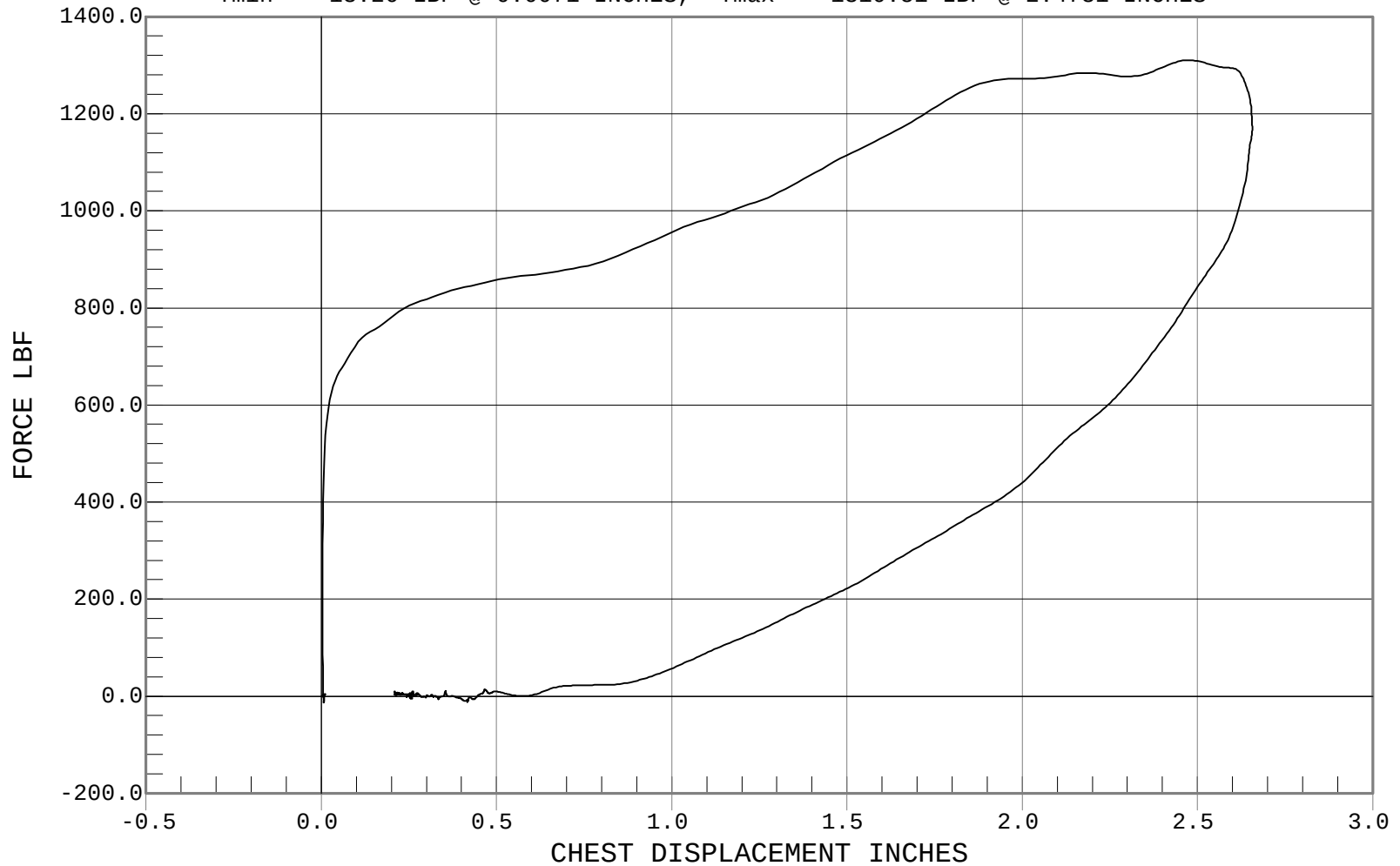
THORAX IMPACT

Test Desc.: Dummy Calibration - Chest Impact
Component: Dummy #066

Test Date: 11-08-00
Speed: 22.23 FT/SEC, 6.78 M/SEC

1 FORCE, D00404CH.FVD

Ymin = -13.26 LBF @ 0.0071 INCHES, Ymax = 1310.51 LBF @ 2.4731 INCHES



MGA RESEARCH CORPORATION
RIGHT KNEE IMPACT TEST
HYBRID III

Date: 11/7/00
Dummy Serial Number: 066
Test Number: D001405

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°F)	66 – 78	69°
Relative Humidity (%)	10 – 70	45%
Probe Speed	6.8 – 7.0 ft/sec	6.8
Maximum Force	1060 - 1300	1089

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____



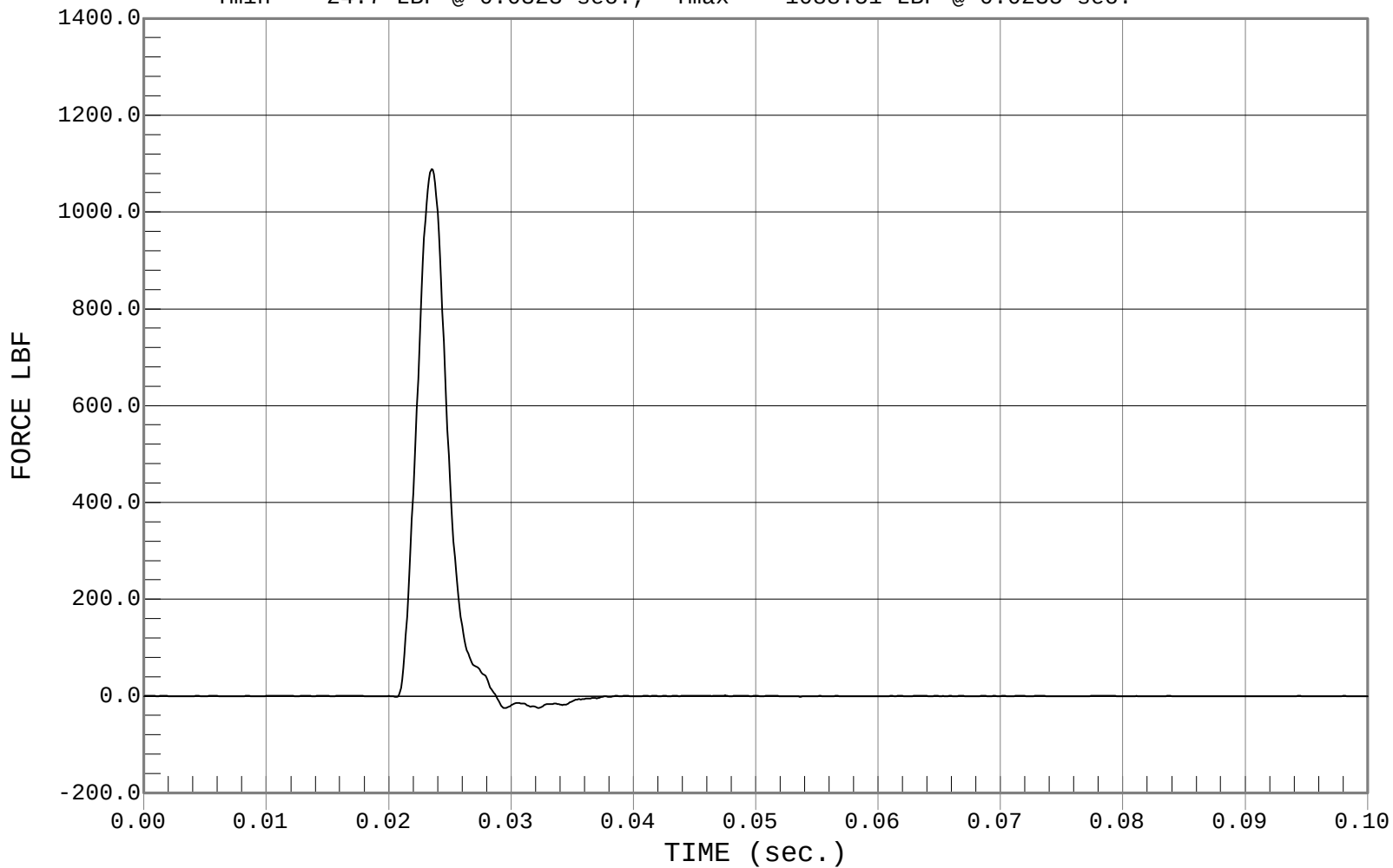
KNEE IMPACT

Test Desc.: Dummy Calibration - Right Knee Impact
Component: Dummy #066

Test Date: 11-07-00
Speed: 6.81 FT/SEC, 2.08 M/SEC

1 FORCE, D00405FF.F09

Ymin = -24.7 LBF @ 0.0323 sec., Ymax = 1088.51 LBF @ 0.0235 sec.



MGA RESEARCH CORPORATION
LEFT KNEE IMPACT TEST
HYBRID III

Date: 11/7/00
Dummy Serial Number: 066
Test Number: D001406

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°F)	66 – 78	69°
Relative Humidity (%)	10 – 70	45%
Probe Speed	6.8 – 7.0 ft/sec	6.8
Maximum Force	1060 - 1300	1096

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____



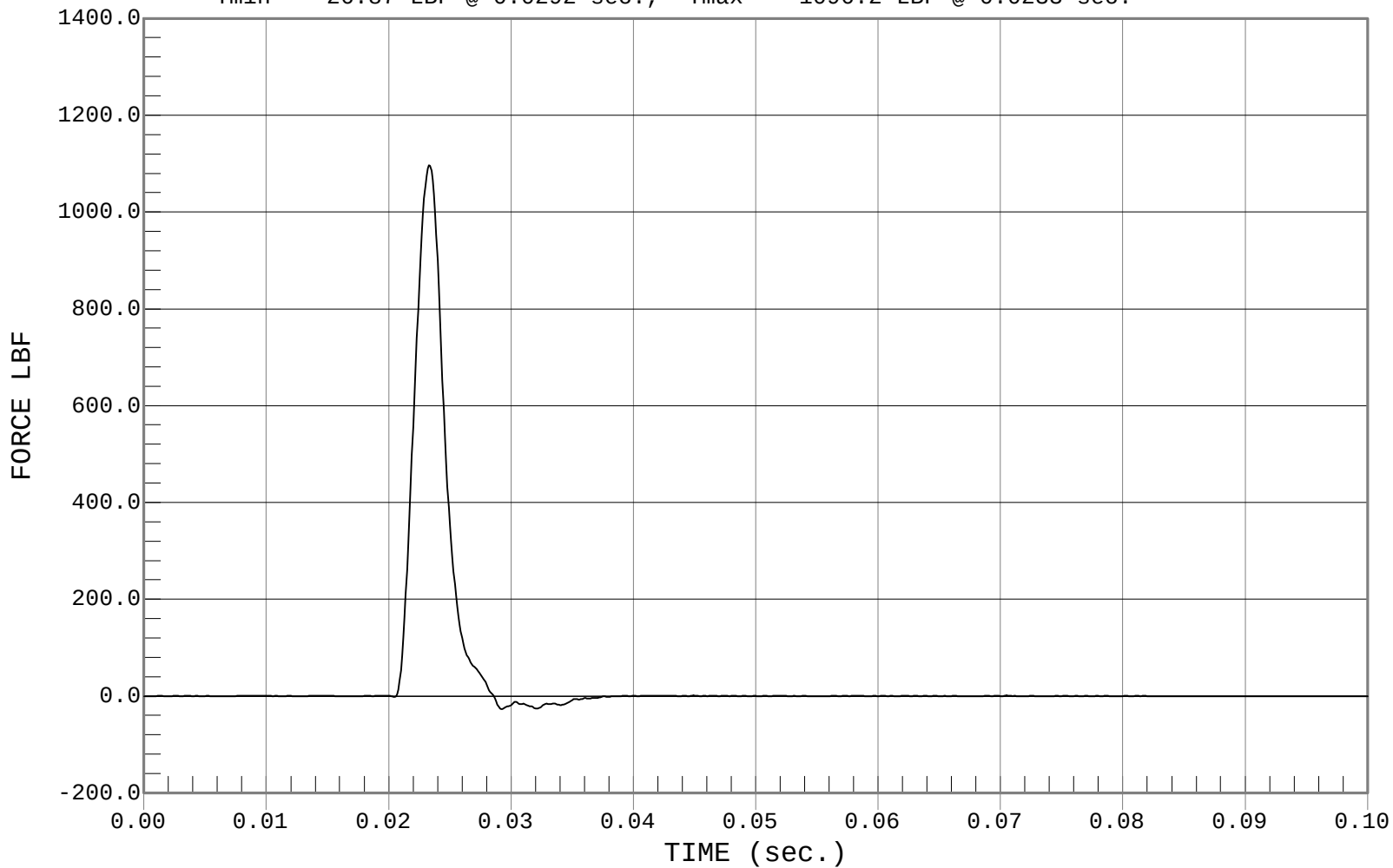
KNEE IMPACT

Test Desc.: Dummy Calibration - Left Knee Impact
Component: Dummy #066

Test Date: 11-07-00
Speed: 6.84 FT/SEC, 2.08 M/SEC

1 FORCE, D00406FF.F09

Ymin = -26.87 LBF @ 0.0292 sec., Ymax = 1096.2 LBF @ 0.0233 sec.



MGA RESEARCH CORPORATION
HIP-FEMUR FLEXION TEST
HYBRID III

Date: 11/8/00
Dummy Serial Number: 066
Test Number: D001409/0

TEST PARAMETER	SPECIFICATION	TEST RESULTS	
		Right	Left
Temperature (°F)	66 – 78	70°	70°
Relative Humidity (%)	10 – 70	32%	32%
Rotation Rate	5-10 deg/sec	Yes	Yes
30 Degrees	70 ft-lb maximum	44	48
150 ft-lbf	40-50 degree maximum rotation	46°	45°

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____



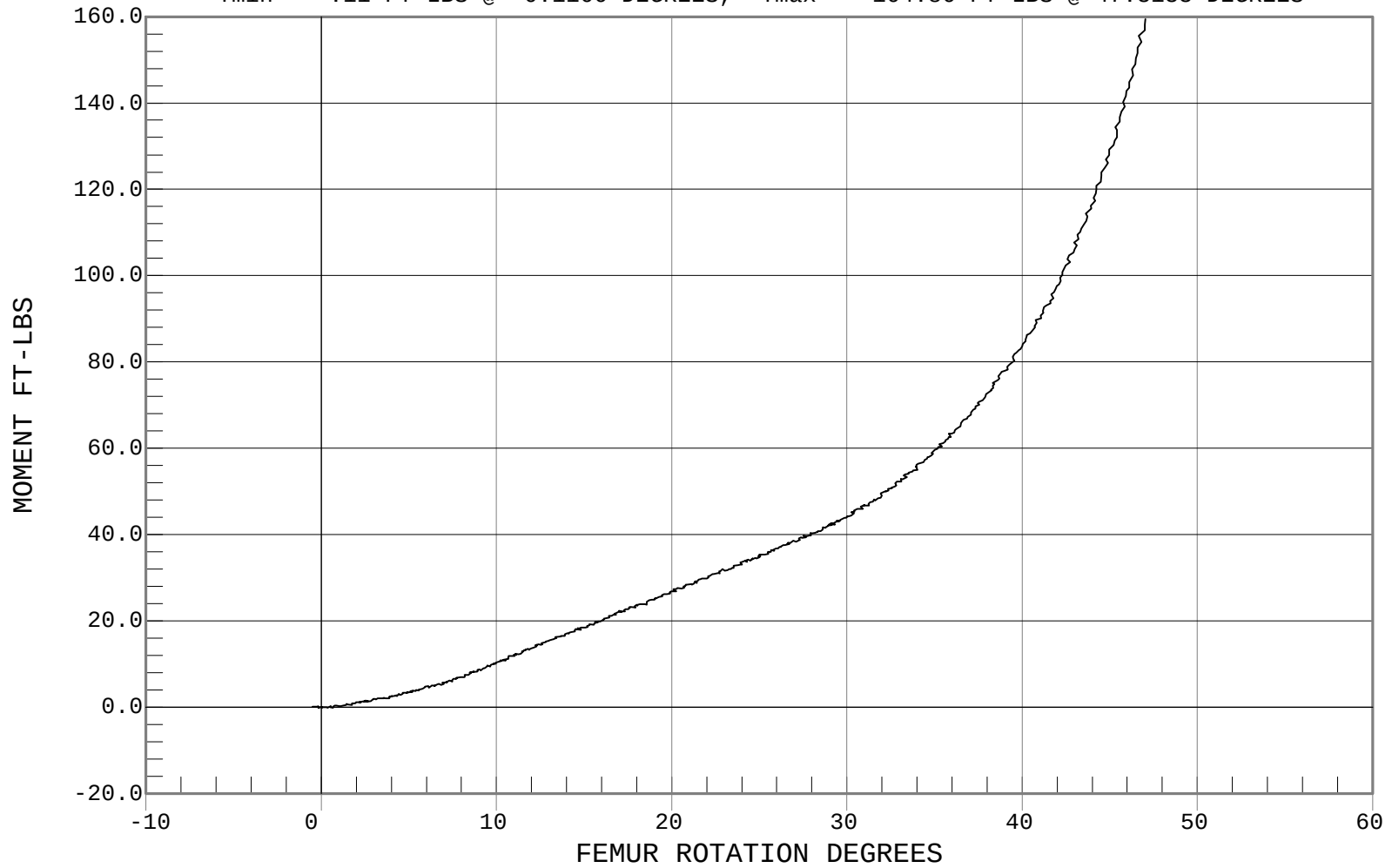
HIP-FEMUR FLEXION

Test Desc.: DUMMY CALIBRATION - HIP-FEMUR FLEXION
Component: DUMMY # 066 RIGHT FEMUR

Test Date: 11-08-00
Speed: 0.00 FT/SEC, 0.00 M/SEC

1 MOMENT, D00409FC.F14

Ymin = -.11 FT-LBS @ -0.1166 DEGREES, Ymax = 164.86 FT-LBS @ 47.3133 DEGREES





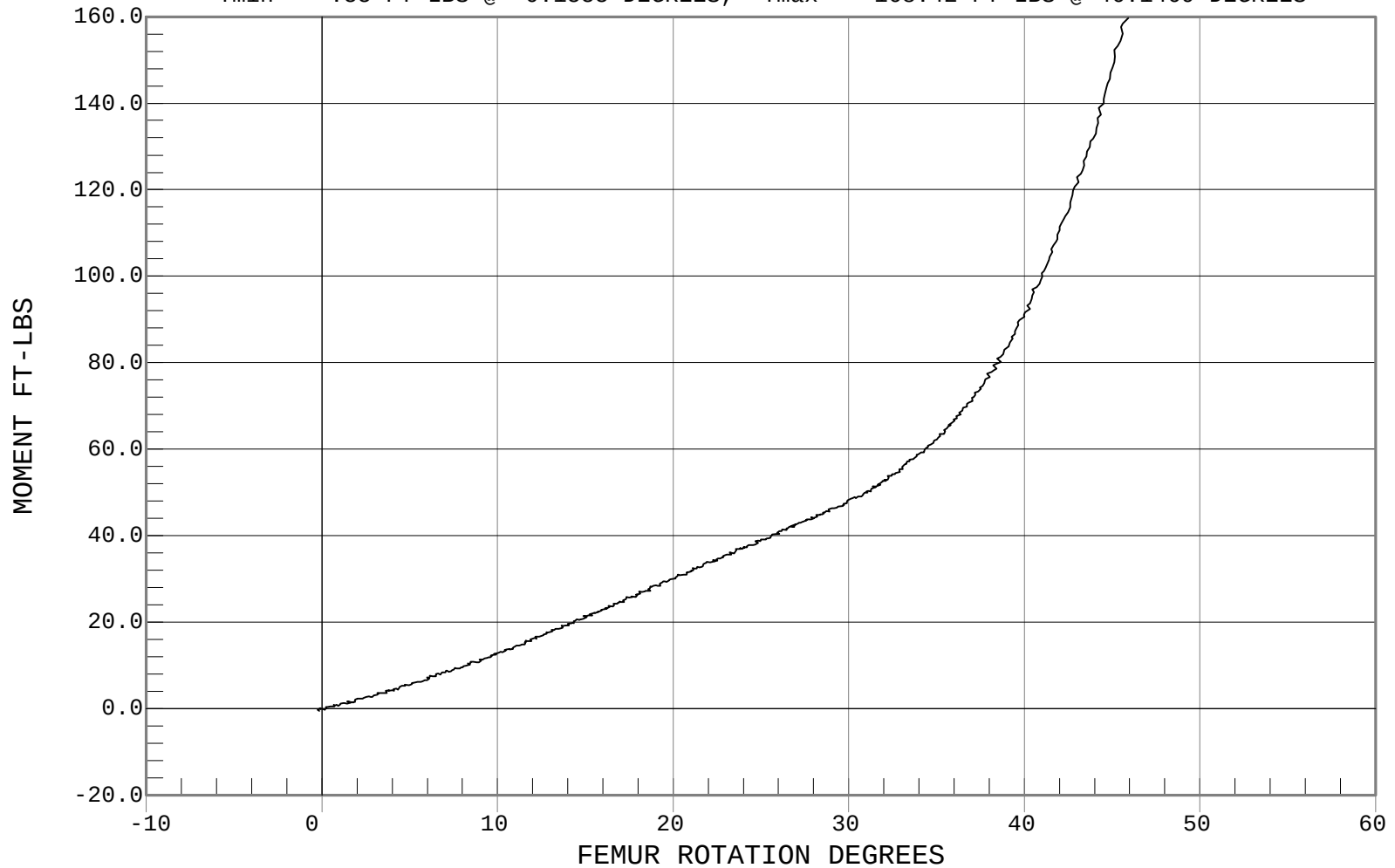
HIP-FEMUR FLEXION

Test Desc.: DUMMY CALIBRATION - HIP-FEMUR FLEXION
Component: DUMMY # 066 LEFT FEMUR

Test Date: 11-08-00
Speed: 0.00 FT/SEC, 0.00 M/SEC

1 MOMENT, D00400FC.F14

Ymin = -.55 FT-LBS @ -.1555 DEGREES, Ymax = 168.42 FT-LBS @ 46.1469 DEGREES



DUMMY INSPECTION CHECKLIST

Type: Hybrid III

Dummy Serial Number: 066

Inspected By: Tim Michnay

Date: 11/8/00

<u>Part</u>	<u>Items Checked</u>	<u>Comments</u>
Skin	visual inspection	OK
Head	visual, ballast, accelerometer mount	OK
Neck	visual, cable torque, nodding blocks	OK
Clavicles	visual, bumpers, range of motion	OK
Arms/Hands	visual, bumpers, range of motion	OK
Spine box	visual, ballast, weldment, accelerometer mount	OK
Rib cage	visual, measure, stiffeners	OK
Sternum	visual, bumpers	OK
Lumbar spine	visual, cable torque	OK
Abdomen	visual	OK
Pelvis	visual, palpate, accelerometer mount	OK
Upper legs	visual, load cell bolts	OK
Knees	visual, stops, inserts, sliders	OK
Lower legs	visual, range of motion	OK
Ankles	visual, range of motion	OK
Feet	visual, range of motion	OK
Joints	1 to 2 g range	OK
Other		

Notes (include component/problem/action/reason):

CERTIFICATION DATA

Dummy Serial Number: 065

Calibration Test Results Summary

Dummy Serial Number: 065

Pre-Test Calibration

External Dimensions:	The dummy passed all external dimension requirements.
Head Drop Test:	The head passed all drop test requirements.
Neck Flexion Test:	The neck passed all flexion test requirements.
Neck Extension Test:	The neck passed all extension test requirements.
Thorax Impact Test:	The thorax passed all impact test requirements.
Knee Impact Tests:	Both knees passed all impact test requirements.
Hip-Femur Flexion Tests:	Both femurs passed all flexion test requirements.

HYBRID III DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

Dummy Serial Number: 065

Date of Verification: 11/8/00

Test Number: D00139

DESCRIPTION	SPECIFICATION	TEST RESULTS
Temperature (°F)	69 – 72	70°
Relative Humidity	10 – 70	33%
AA - Location for Chest Circumference	16.9" – 17.1"	17.0
BB - Location for Waist Circumference	8.9" – 9.1"	9.0
A - Total Sitting Height	34.6" – 35.0"	34.8
B – Shoulder Pivot Height	19.9" – 20.5"	8.1
C – H Point Height	3.3" – 3.5"	3.4
D – H Point from Seat Back	5.3" – 5.5"	5.4
E – Shoulder Pivot From Backline	3.3" – 3.7"	3.4
F – Thigh Clearance	5.5" – 6.1"	5.9
G – Back of Elbow to Wrist Pivot	11.4" – 12.0"	11.5
H – Skull Cap Skin to Backline	1.6" – 1.8"	1.7
I – Shoulder Elbow Length	13.0" – 13.6"	13.2
J – Elbow Rest Height	7.5" – 8.3"	8.1
K – Buttock Knee Length	22.8" – 23.8"	23.5
L – Popliteal Height	16.9" – 17.9"	17.8
M – Knee Pivot Height	19.1 – 19.9"	19.4
N – Buttock Popliteal Length	17.8" – 18.8"	18.6
O – Chest Depth at 3 rd Rib	8.4" – 9.0"	8.5
P – Foot Length	9.9" – 10.5"	10.4
V – Shoulder Breadth	16.6" – 17.2"	17.1
W – Foot Breadth	3.5" – 4.2"	3.9
Y – Chest Circumference	38.2" – 39.4"	39.1
Z – Waist Circumference	32.9" – 34.1"	33.5

Technician: _____

Approved By: _____

MGA RESEARCH CORPORATION
HEAD DROP TEST
HYBRID III

Date: 11/6/00
Dummy Serial Number: 065
Test Number: D001391

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°F)	66 – 78	70°
Relative Humidity (%)	10 – 70	33%
Peak Resultant Acceleration	225 – 275 g's	260
Peak Lateral Acceleration	± 15 g's max.	-8
Is Acceleration Curve Unimodal	Within 10% of peak	Yes

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____



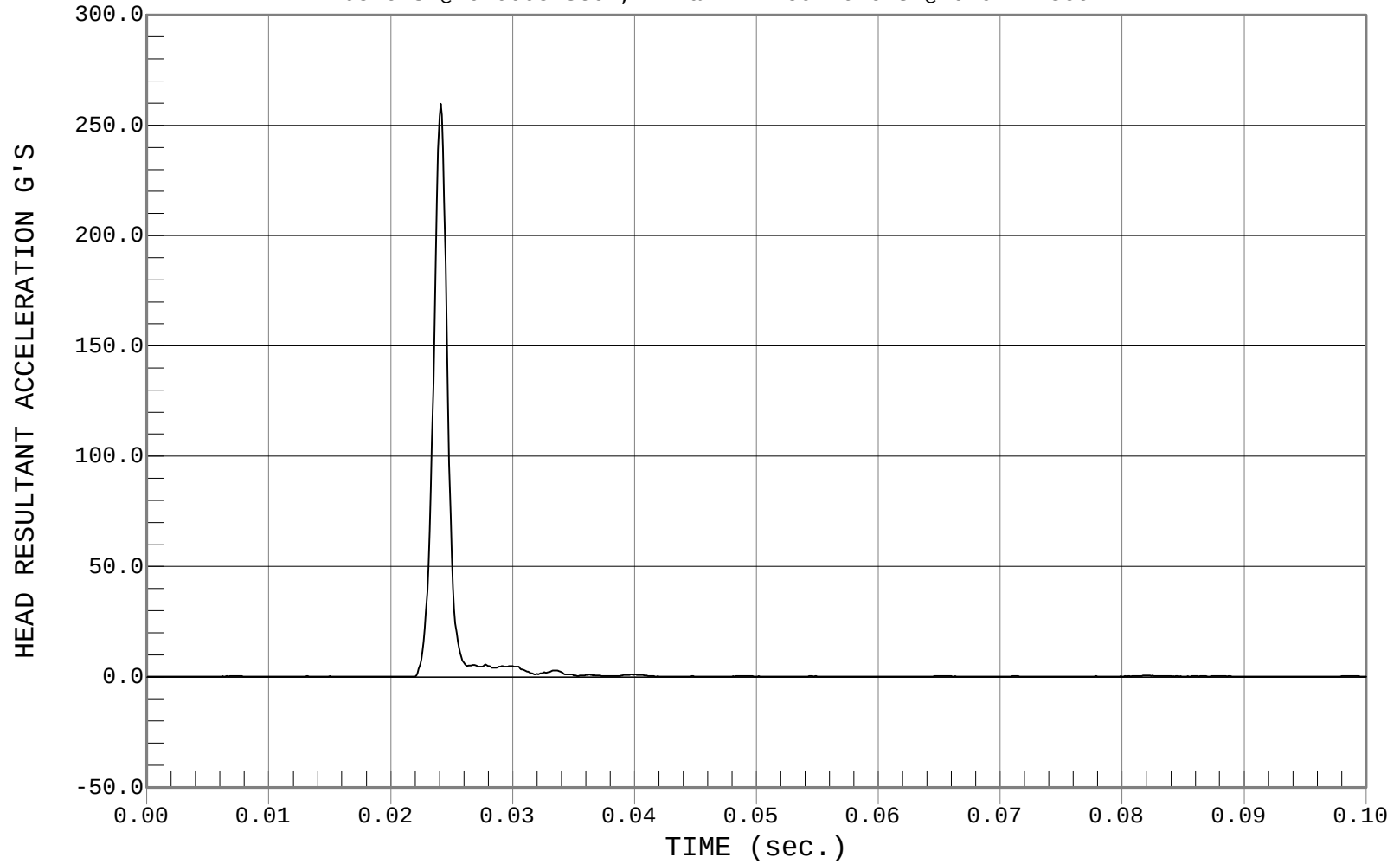
PEAK RESULTANT ACCELERATION

Test Desc.: Dummy Calibration - Head Drop
Component: Dummy #065

Test Date: 11-06-00
Speed: 0.00 FT/SEC, 0.00 M/SEC

1 HEAD RESULTANT ACCELERATION, D00391av.a01

Ymin = .08 G'S @ 0.0003 sec., Ymax = 259.76 G'S @ 0.0241 sec.





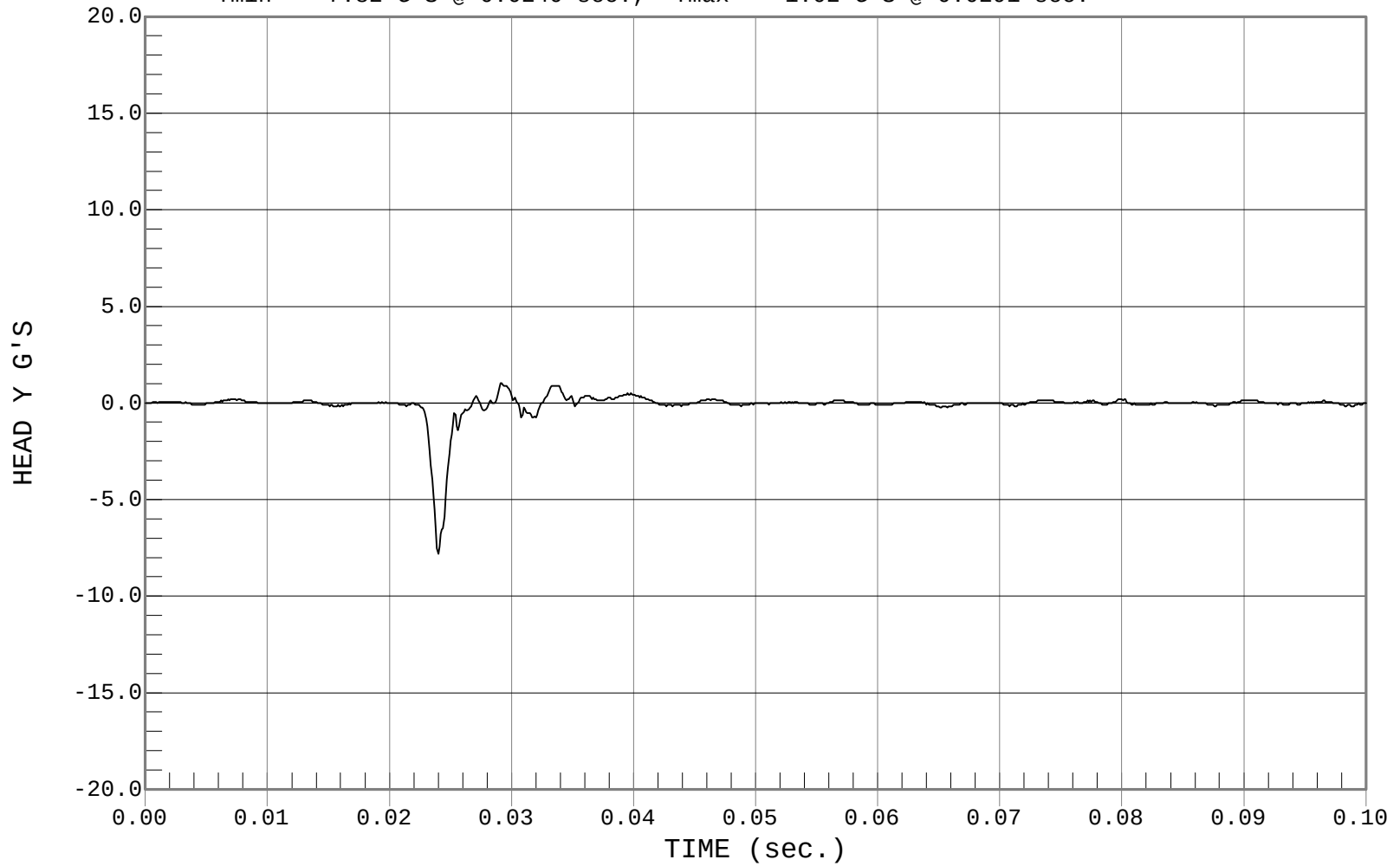
PEAK LATERAL ACCELARATION

Test Desc.: Dummy Calibration - Head Drop
Component: Dummy #065

Test Date: 11-06-00
Speed: 0.00 FT/SEC, 0.00 M/SEC

1 HEAD Y, D00391AR.A02

Ymin = -7.82 G'S @ 0.0240 sec., Ymax = 1.02 G'S @ 0.0291 sec.



MGA RESEARCH CORPORATION
NECK FLEXION TEST
HYBRID III

Date: 11/7/00
Dummy Serial Number: 065
Test Number: D001392

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature (°F)		69 - 72	70°
Relative Humidity (%)		10 – 70	39%
Pendulum Speed		22.6 – 23.4 ft/sec	23.3
Pendulum Deceleration	10 ms	22.50 – 27.50 g	23.17
	20 ms	17.60 – 22.60 g	20.32
	30 ms	12.50 – 18.50 g	15.63
Max. Pendulum G Above 30 ms		29.0 g max.	15.6
Deceleration – Time Curve Decay Time to 5 G		34 – 42 ms	37
D Plane Rotation	Max.	64 – 78 deg.	73
	Time	57.- 64 ms	59
Rotation Angle – Time Curve Decay Time to Zero		113 – 128 ms	114
Moment About Occipital Condyle	Max.	65 – 80 ft-lbf	68
	Time	47 – 58 ms	51
Positive Moment – Time Curve Decay Time to Zero		97 – 107 ms	101

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____



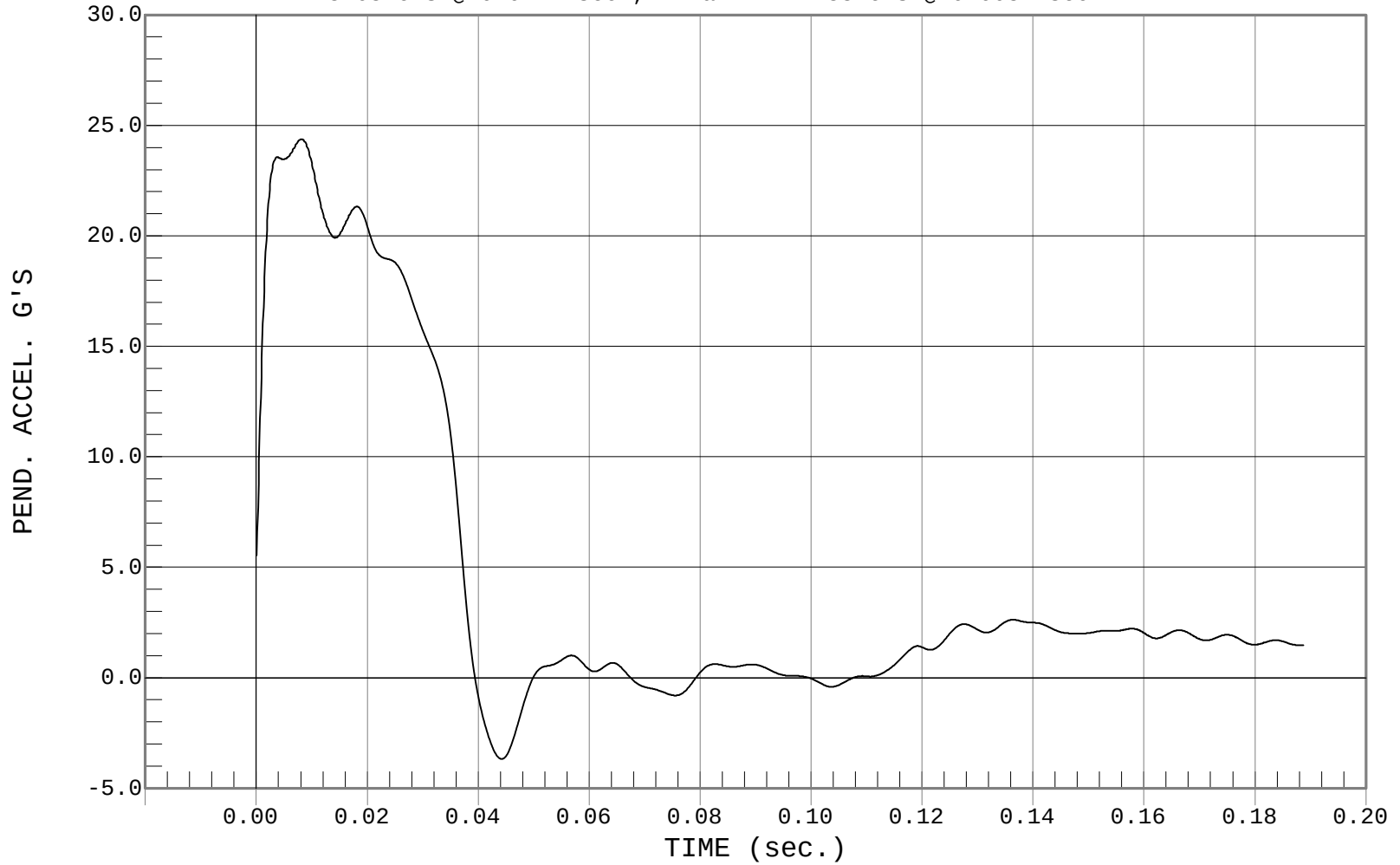
PENDULUM DECELERATION

Test Desc.: Dummy Calibration - Neck Flexion
Component: Dummy #065

Test Date: 11-07-00
Speed: 23.26 FT/SEC, 7.09 M/SEC

1 PEND. ACCEL., D00392AF.A04

Ymin = -3.68 G'S @ 0.0442 sec., Ymax = 24.38 G'S @ 0.0081 sec.





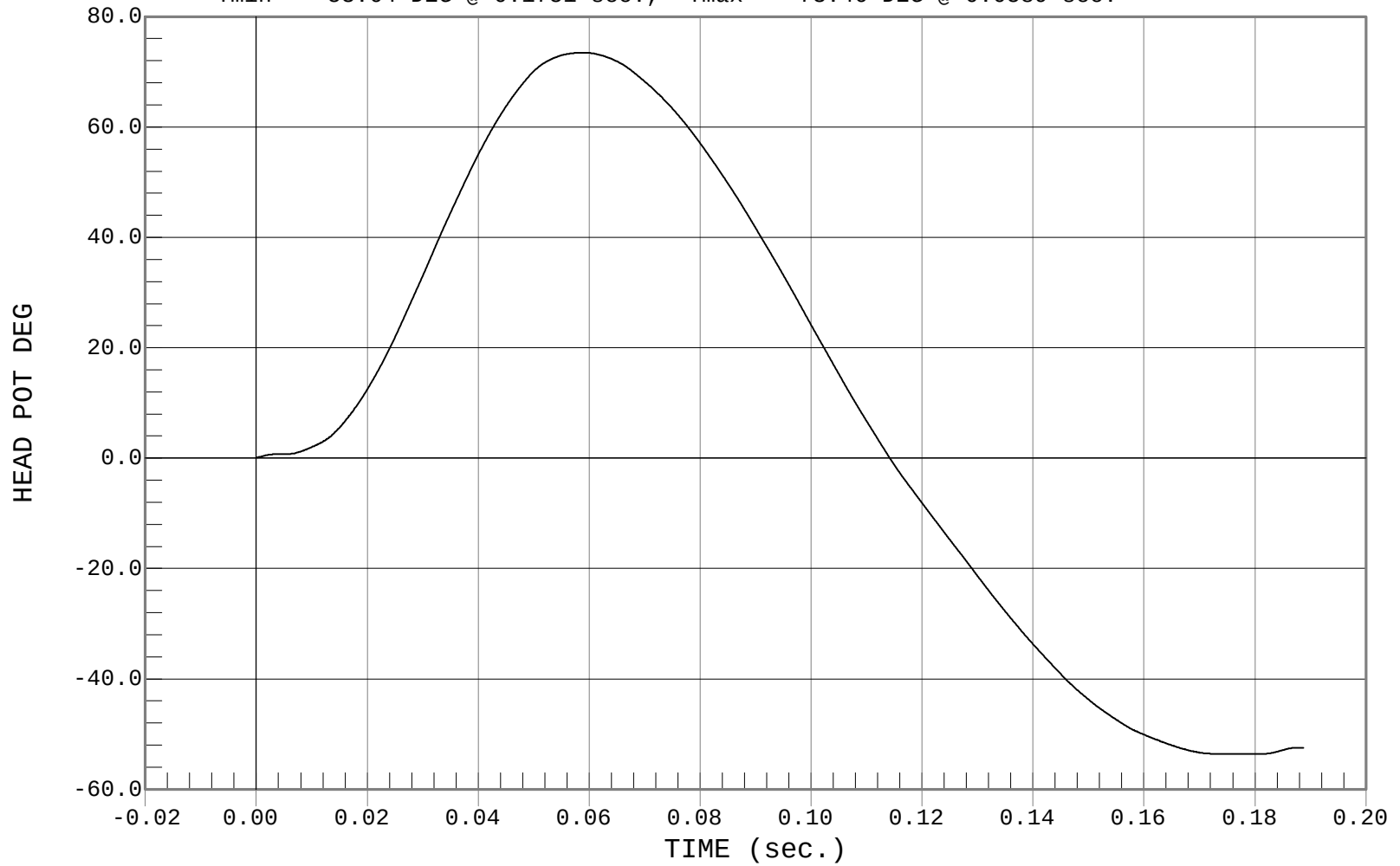
NECK ROTATION

Test Desc.: Dummy Calibration - Neck Flexion
Component: Dummy #065

Test Date: 11-07-00
Speed: 23.26 FT/SEC, 7.09 M/SEC

— 1 HEAD POT, D00392DU.D05

Ymin = -53.64 DEG @ 0.1751 sec., Ymax = 73.46 DEG @ 0.0589 sec.





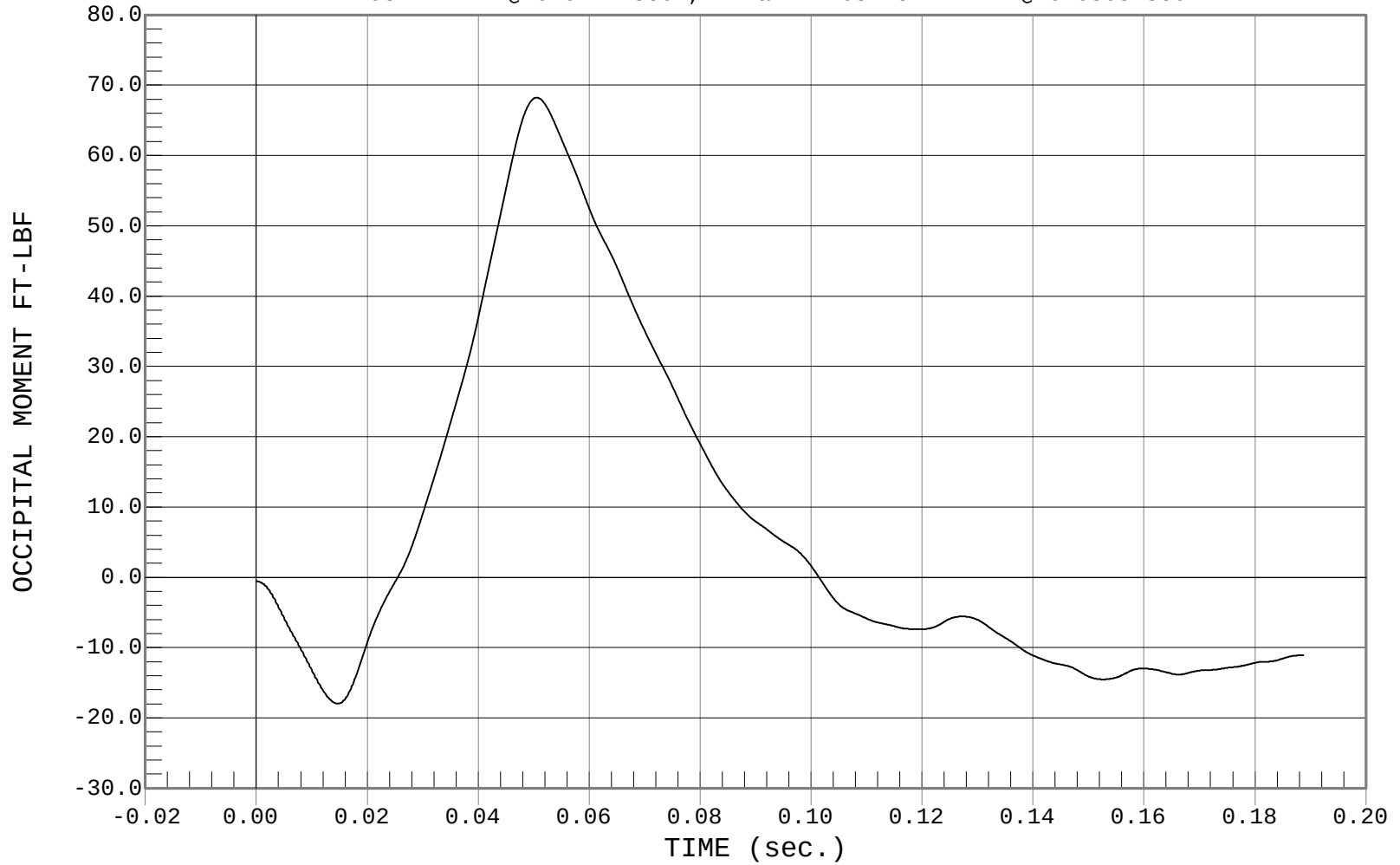
OCCIPITAL MOMENT

Test Desc.: Dummy Calibration - Neck Flexion
Component: Dummy #065

Test Date: 11-07-00
Speed: 23.26 FT/SEC, 7.09 M/SEC

1 OCCIPITAL MOMENT, D00392NK.MNT

Ymin = -17.98 FT-LBF @ 0.0147 sec., Ymax = 68.23 FT-LBF @ 0.0505 sec.



MGA RESEARCH CORPORATION
NECK EXTENSION TEST
HYBRID III

Date: 11/7/00
Dummy Serial Number: 065
Test Number: D001393

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature (°F)		69 – 72	70°
Relative Humidity (%)		10 – 70	39%
Pendulum Speed		19.50 – 20.30 ft/sec	20.24
Pendulum Deceleration	10 msec	17.20 – 21.20 g	19.05
	20 msec	14.00 – 19.00 g	15.35
	30 msec	11.00 – 16.00 g	14.82
Max. Pendulum G Above 30 ms		22 g max.	16
Deceleration – Time Curve Decay Time to 5 g		38 – 46 ms	39
D Plane Rotation	Max.	81 – 106 deg.	102
	Time	72 – 82 ms	76
Rotation Angle – Time Curve Decay Time to Zero		147 – 174 ms	156
Moment About Occipital Condyle	Min.	-59.0/-39.0 ft-lbf	-47.9
	Time	65 – 79 ms	73
Positive Moment – Time Curve Decay Time to Zero		120 – 148 ms	148

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____



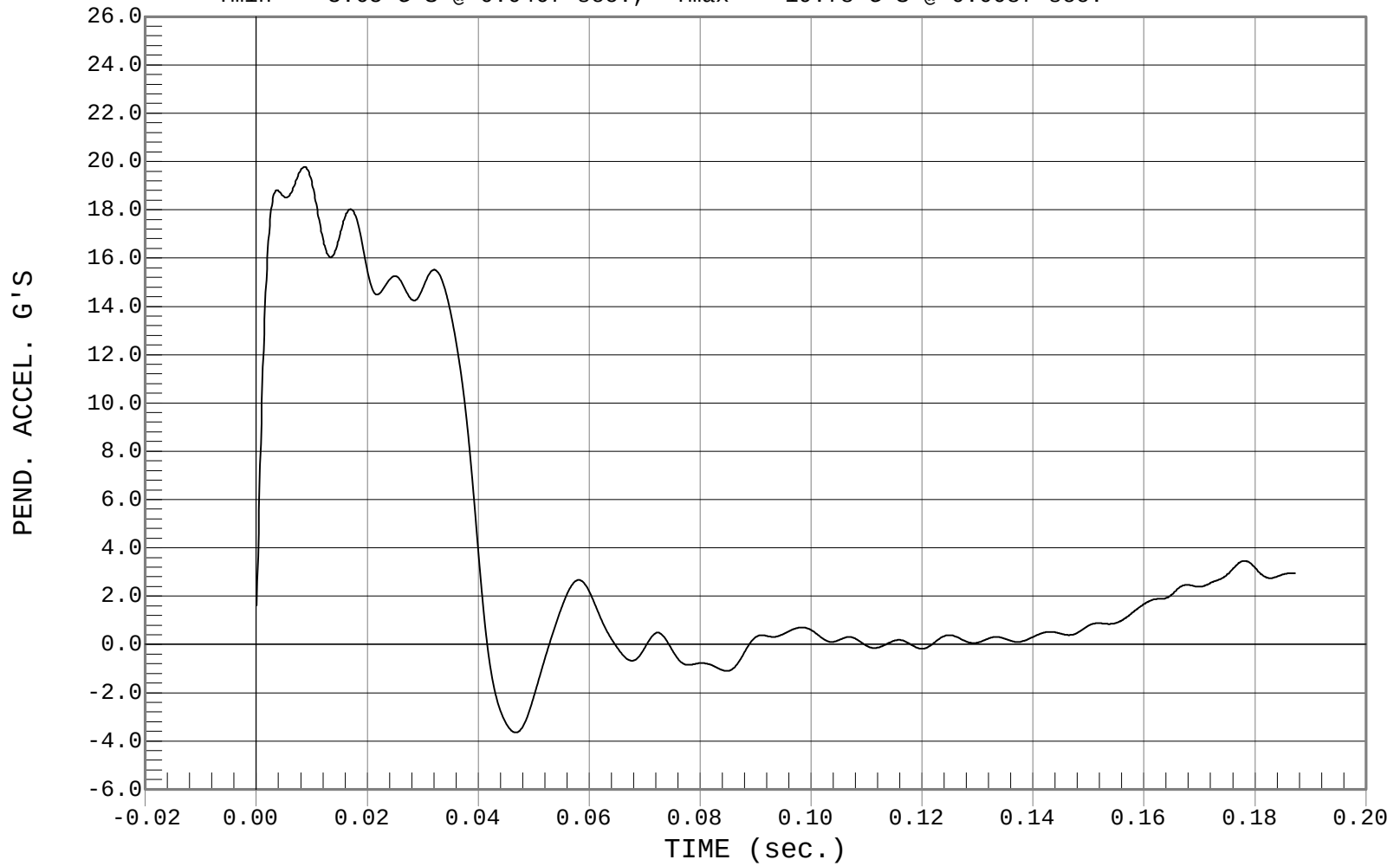
PENDULUM DECELERATION

Test Desc.: Dummy Calibration - Neck Extension
Component: Dummy #065

Test Date: 11-07-00
Speed: 20.24 FT/SEC, 6.17 M/SEC

1 PEND. ACCEL., D00393AF.A04

Ymin = -3.65 G'S @ 0.0467 sec., Ymax = 19.78 G'S @ 0.0087 sec.



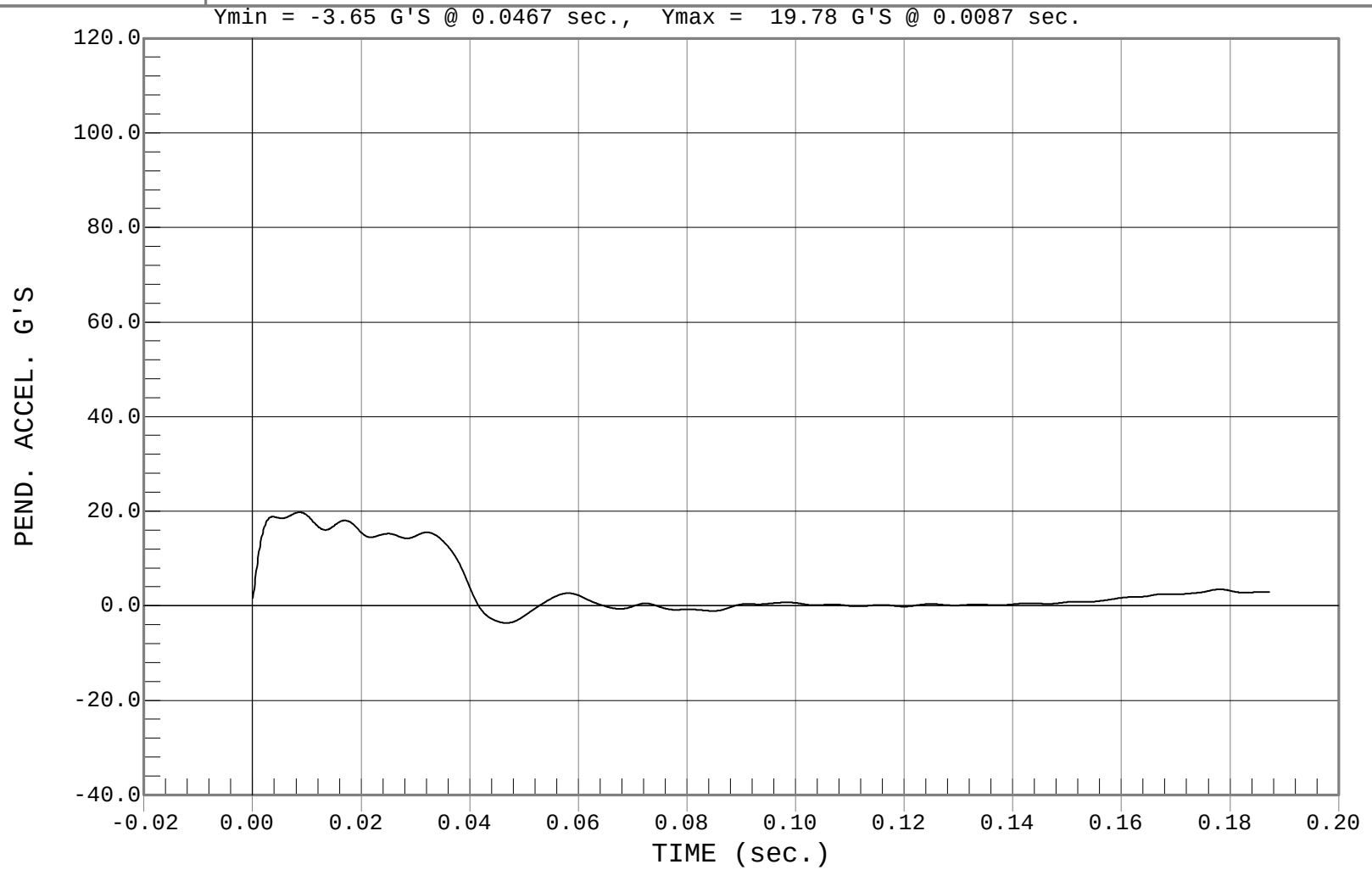


NECK ROTATION

Test Desc.: Dummy Calibration - Neck Extension
Component: Dummy #065

Test Date: 11-07-00
Speed: 20.24 FT/SEC, 6.17 M/SEC

1 PEND. ACCEL., D00393DM.D05





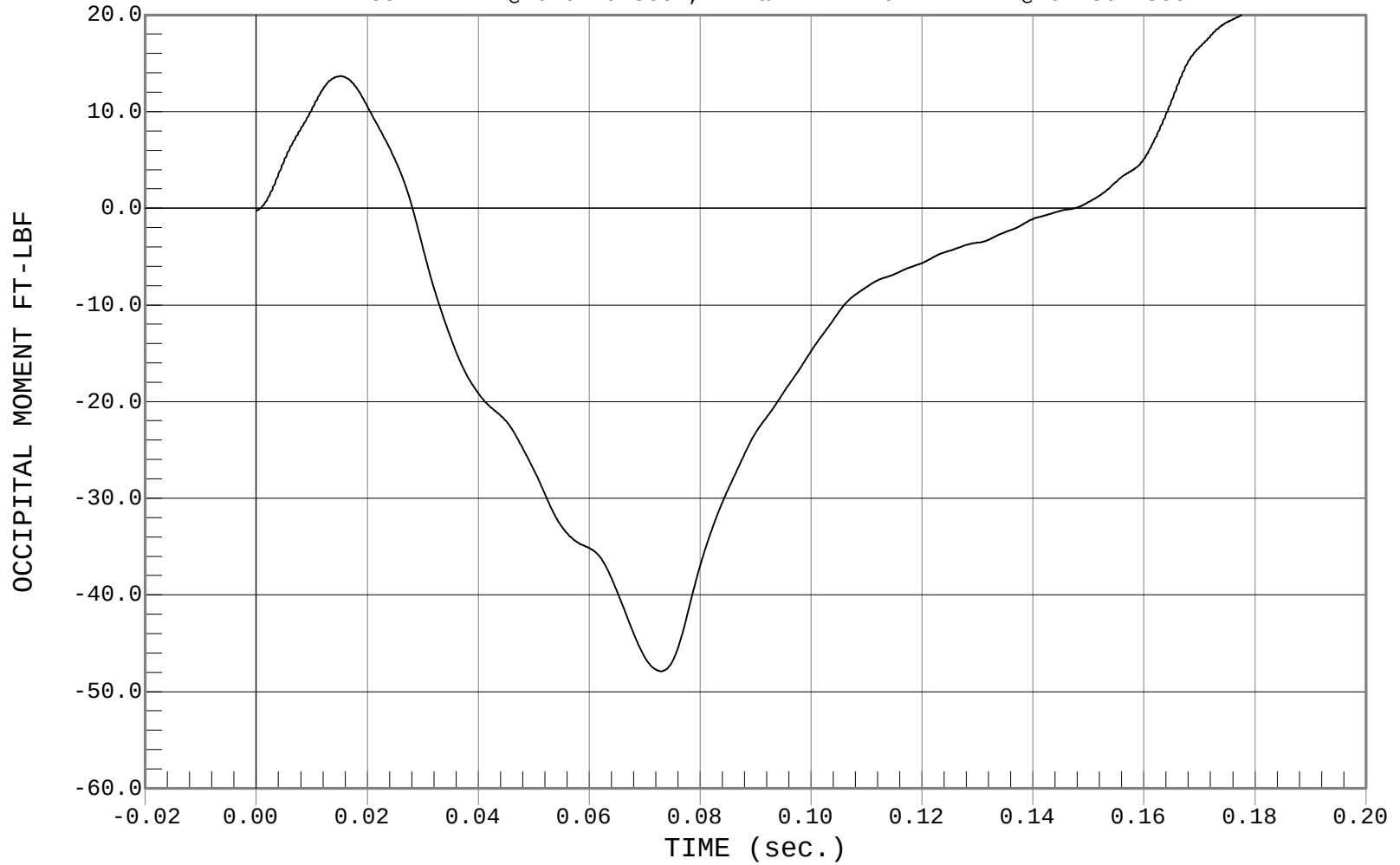
OCCIPITAL MOMENT

Test Desc.: Dummy Calibration - Neck Extension
Component: Dummy #065

Test Date: 11-07-00
Speed: 20.24 FT/SEC, 6.17 M/SEC

1 OCCIPITAL MOMENT, D00393NK.MNT

Ymin = -47.88 FT-LBF @ 0.0729 sec., Ymax = 22.01 FT-LBF @ 0.1864 sec.



MGA RESEARCH CORPORATION
THORAX IMPACT TEST
HYBRID III

Date: 11/8/00
Dummy Serial Number: 065
Test Number: D001394

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°F)	69 – 72	70°
Relative Humidity (%)	10 – 70%	33%
Probe Speed	21.6 – 22.4 ft/sec	22.1
Peak Deflection	2.50 – 2.86 in	2.81
Peak Resistive Force	1160 – 1325 lbs	1289
Internal Hysteresis	69 – 85%	70%

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____



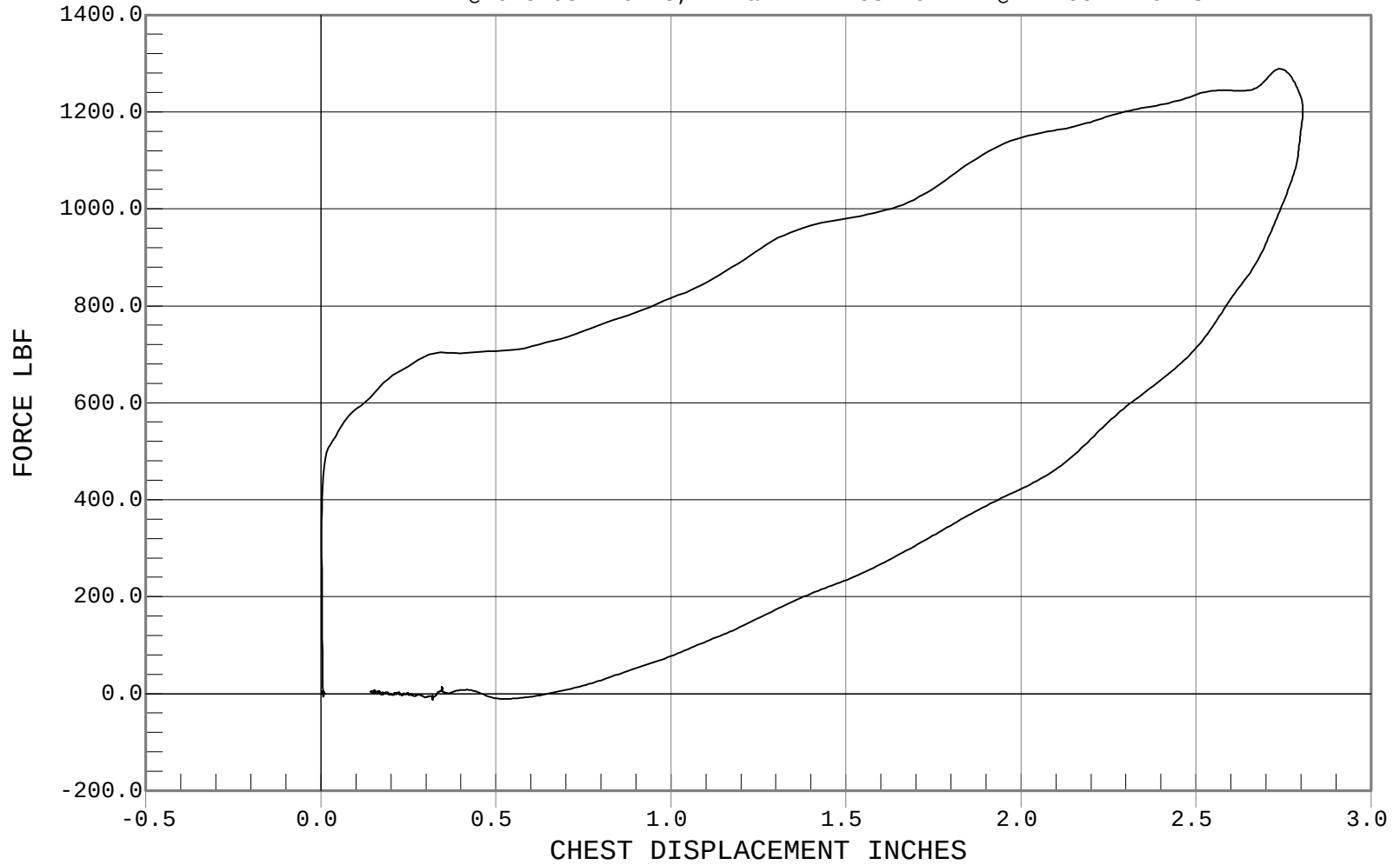
THORAX IMPACT

Test Desc.: Dummy Calibration - Chest Impact
Component: Dummy #065

Test Date: 11-08-00
Speed: 22.10 FT/SEC, 6.74 M/SEC

1 FORCE, D00394CH.FVD

Ymin = -12.74 LBF @ 0.3193 INCHES, Ymax = 1288.73 LBF @ 2.7382 INCHES



MGA RESEARCH CORPORATION
RIGHT KNEE IMPACT TEST
HYBRID III

Date: 11/7/00
Dummy Serial Number: 065
Test Number: D001395

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°F)	66 – 78	69°
Relative Humidity (%)	10 – 70	45%
Probe Speed	6.8 – 7.0 ft/sec	6.9
Maximum Force	1060 - 1300	1183

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____



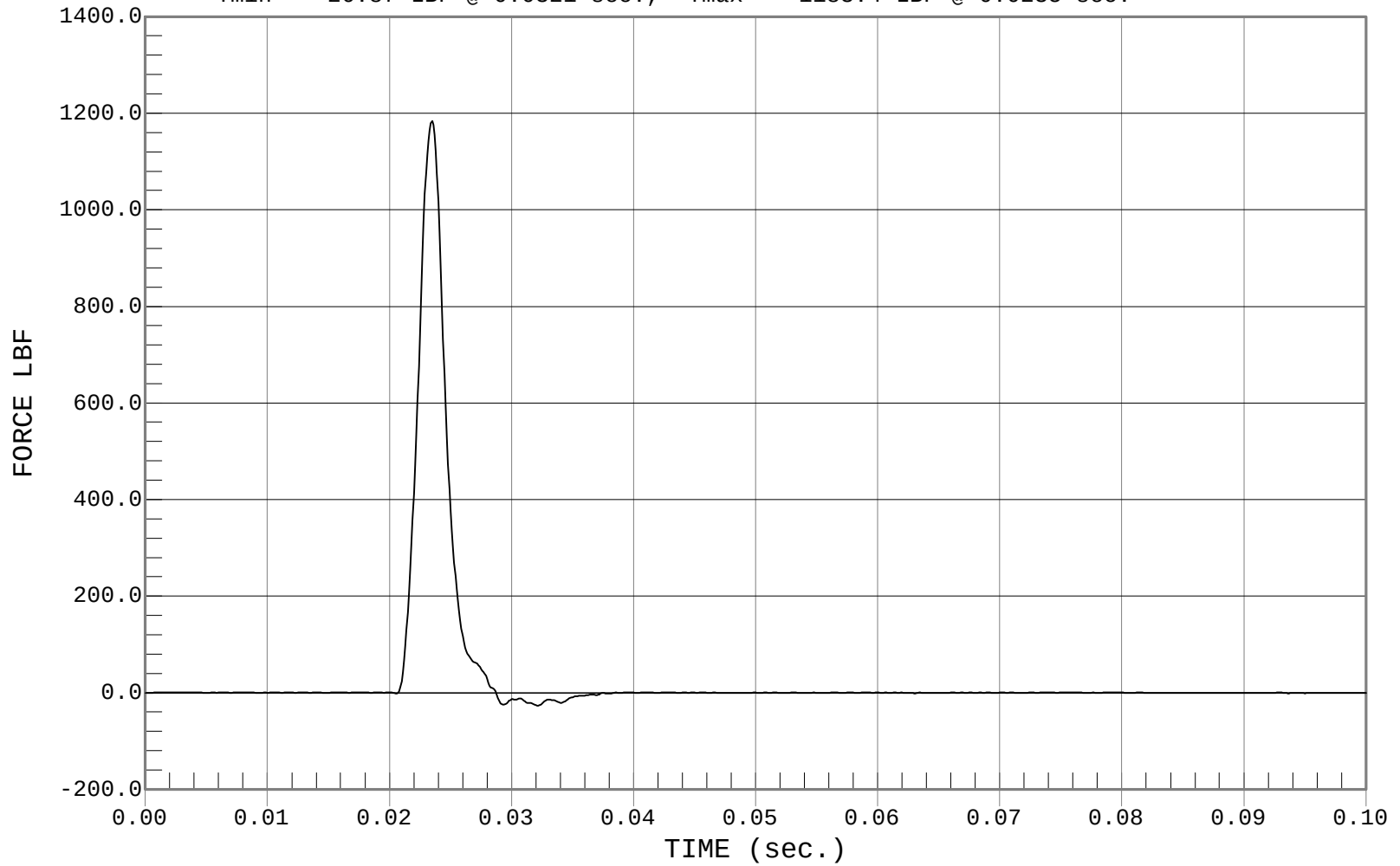
KNEE IMPACT

Test Desc.: Dummy Calibration - Right Knee Impact
Component: Dummy #065

Test Date: 11-07-00
Speed: 6.85 FT/SEC, 2.09 M/SEC

1 FORCE, D00395FF.F09

Ymin = -26.87 LBF @ 0.0321 sec., Ymax = 1183.4 LBF @ 0.0235 sec.



MGA RESEARCH CORPORATION
LEFT KNEE IMPACT TEST
HYBRID III

Date: 11/7/00
Dummy Serial Number: 065
Test Number: D001396

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°F)	66 – 78	69°
Relative Humidity (%)	10 – 70	45%
Probe Speed	6.8 – 7.0 ft/sec	6.9
Maximum Force	1060 - 1300	196

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____



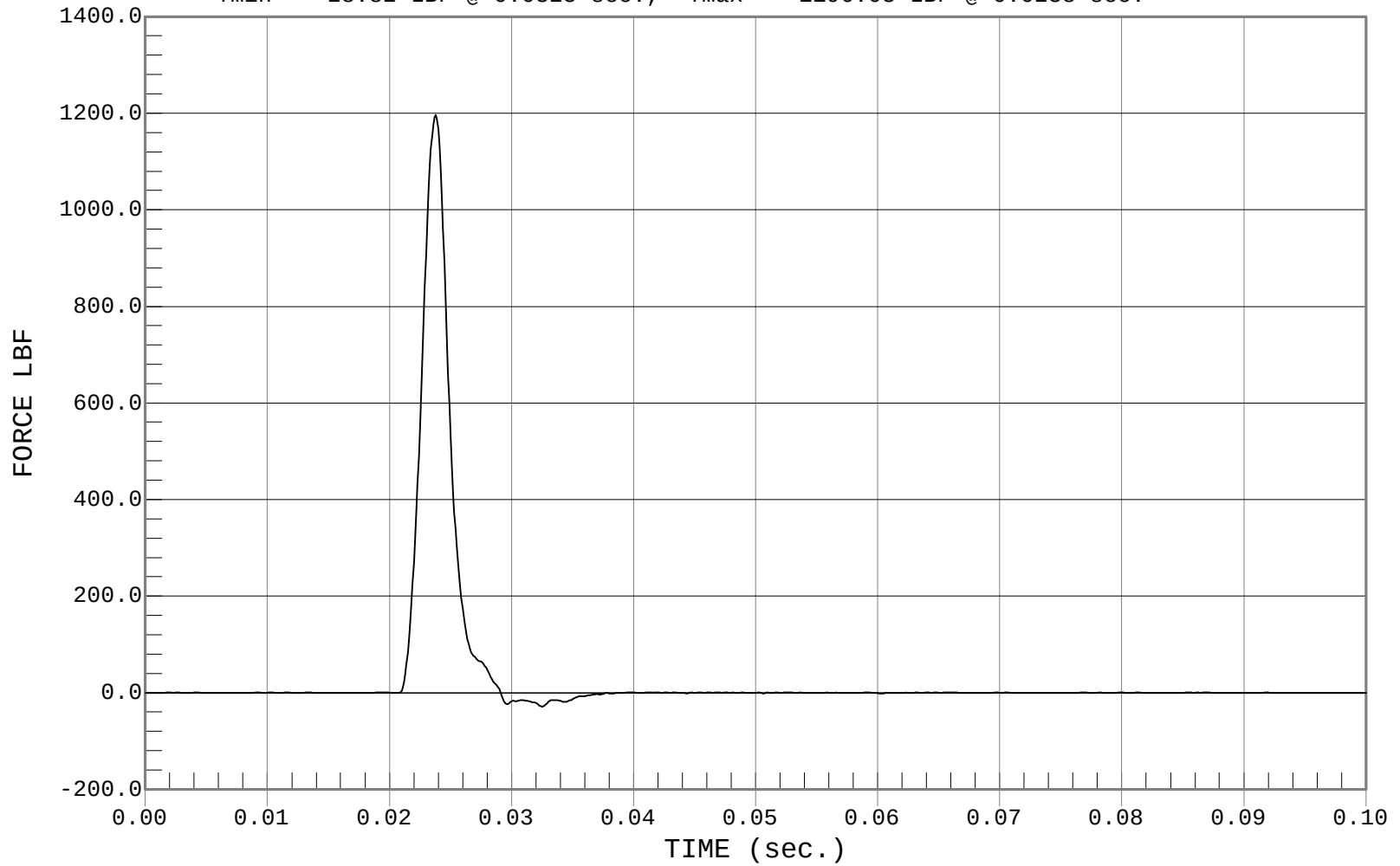
KNEE IMPACT

Test Desc.: Dummy Calibration - Left Knee Impact
Component: Dummy #065

Test Date: 11-07-00
Speed: 6.86 FT/SEC, 2.09 M/SEC

1 FORCE, D00396FF.F09

Ymin = -28.82 LBF @ 0.0325 sec., Ymax = 1196.03 LBF @ 0.0238 sec.



MGA RESEARCH CORPORATION
HIP-FEMUR FLEXION TEST
HYBRID III

Date: 11/8/00
Dummy Serial Number: 065
Test Number: D001399/0

TEST PARAMETER	SPECIFICATION	TEST RESULTS	
		Right	Left
Temperature (°F)	66 – 78	70°	70°
Relative Humidity (%)	10 – 70	36%	36%
Rotation Rate	5-10 deg/sec	Yes	Yes
30 Degrees	70 ft-lb maximum	42	47
150 ft-lbf	40-50 degree maximum rotation	47°	46°

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____



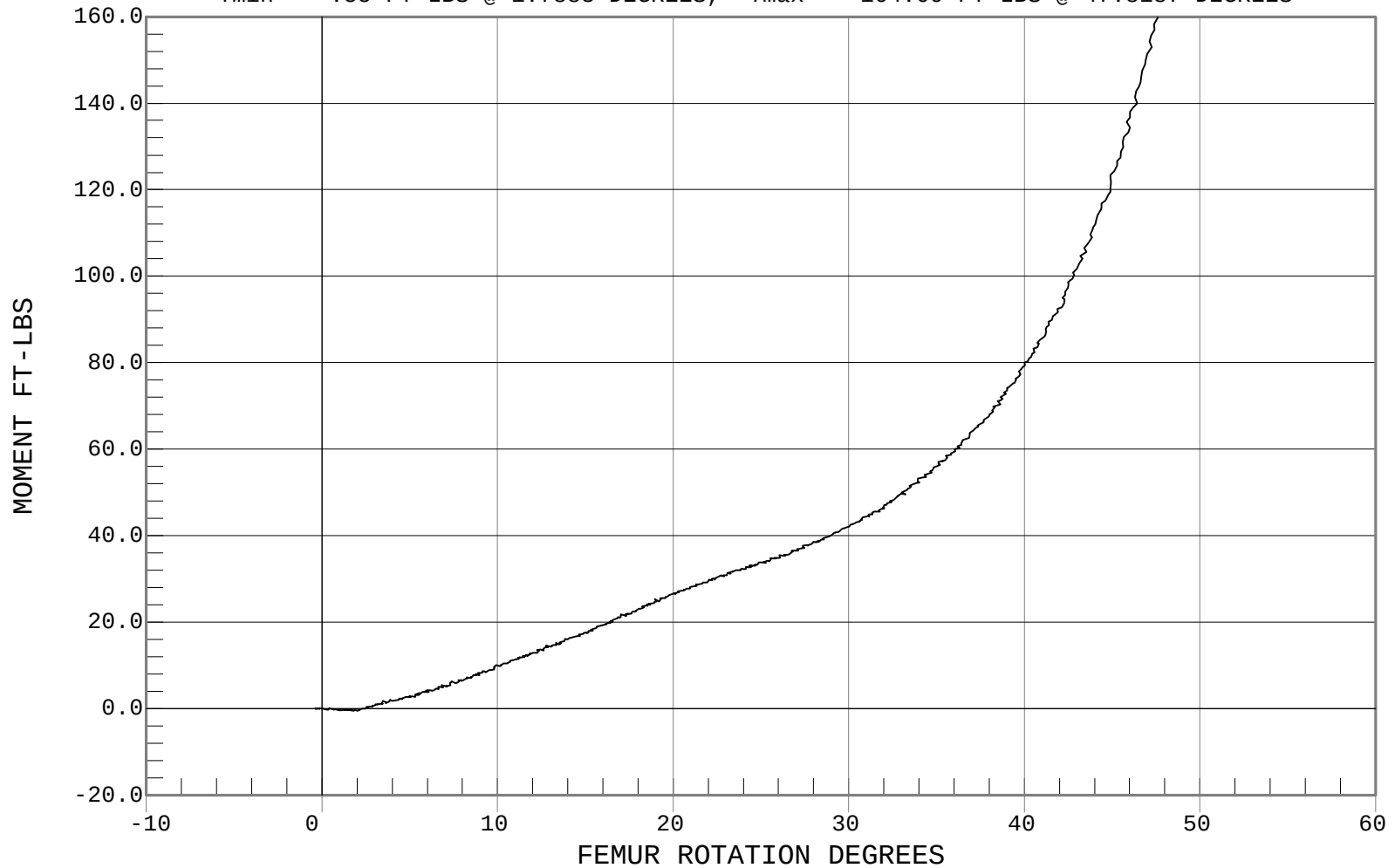
HIP-FEMUR FLEXION

Test Desc.: DUMMY CALIBRATION - HIP-FEMUR FLEXION
Component: DUMMY # 065

Test Date: 11-08-00
Speed: 0.00 FT/SEC, 0.00 M/SEC

1 MOMENT, D00399FC.F14

Ymin = -.55 FT-LBS @ 1.7883 DEGREES, Ymax = 164.09 FT-LBS @ 47.8187 DEGREES





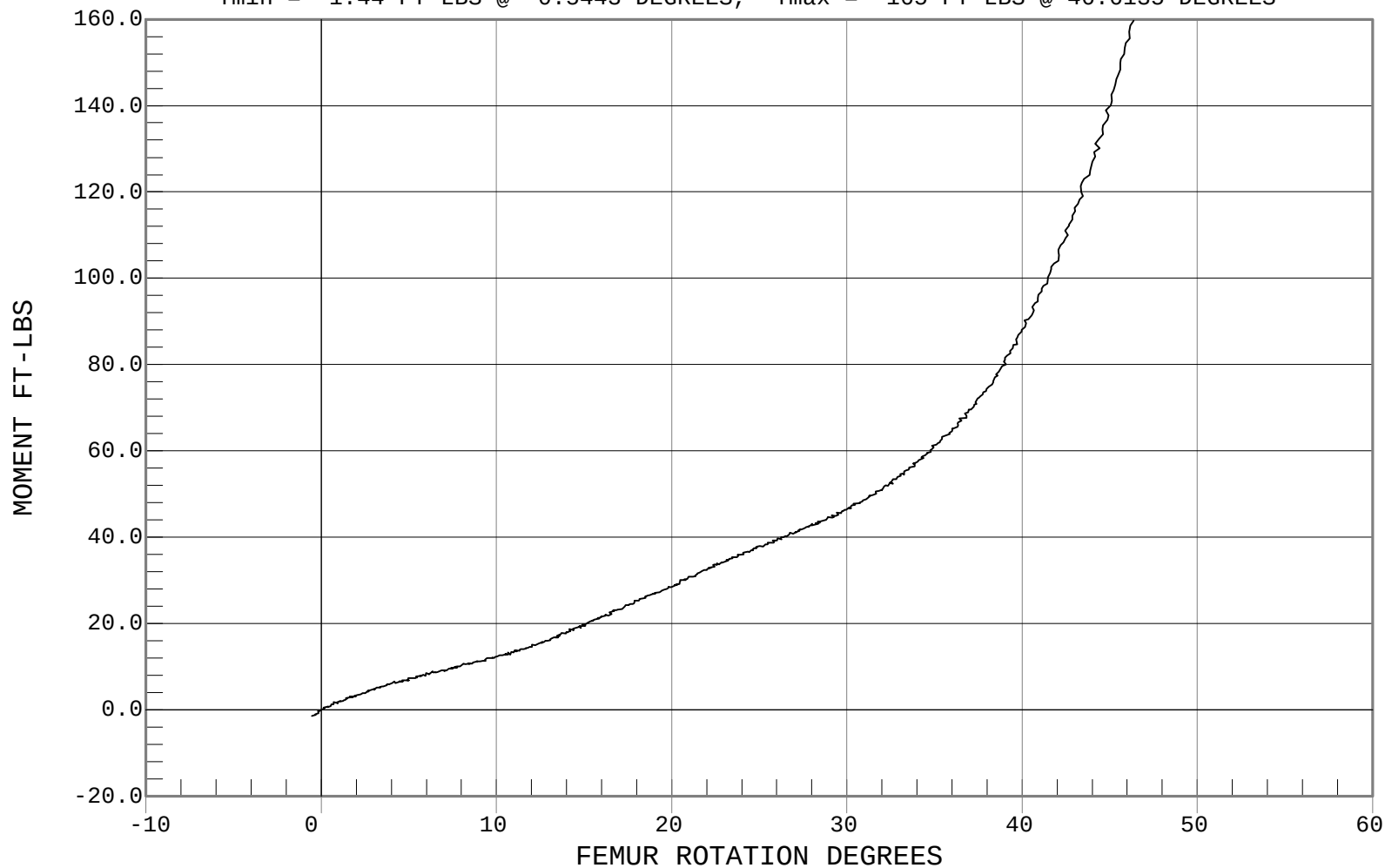
HIP-FEMUR FLEXION

Test Desc.: DUMMY CALIBRATION - HIP-FEMUR FLEXION
Component: DUMMY # 065 LEFT FEMUR

Test Date: 11-08-00
Speed: 0.00 FT/SEC, 0.00 M/SEC

1 MOMENT, D00390FC.F14

Ymin = -1.44 FT-LBS @ -0.5443 DEGREES, Ymax = 165 FT-LBS @ 46.6135 DEGREES



DUMMY INSPECTION CHECKLIST

Type: Hybrid III

Dummy Serial Number: 065

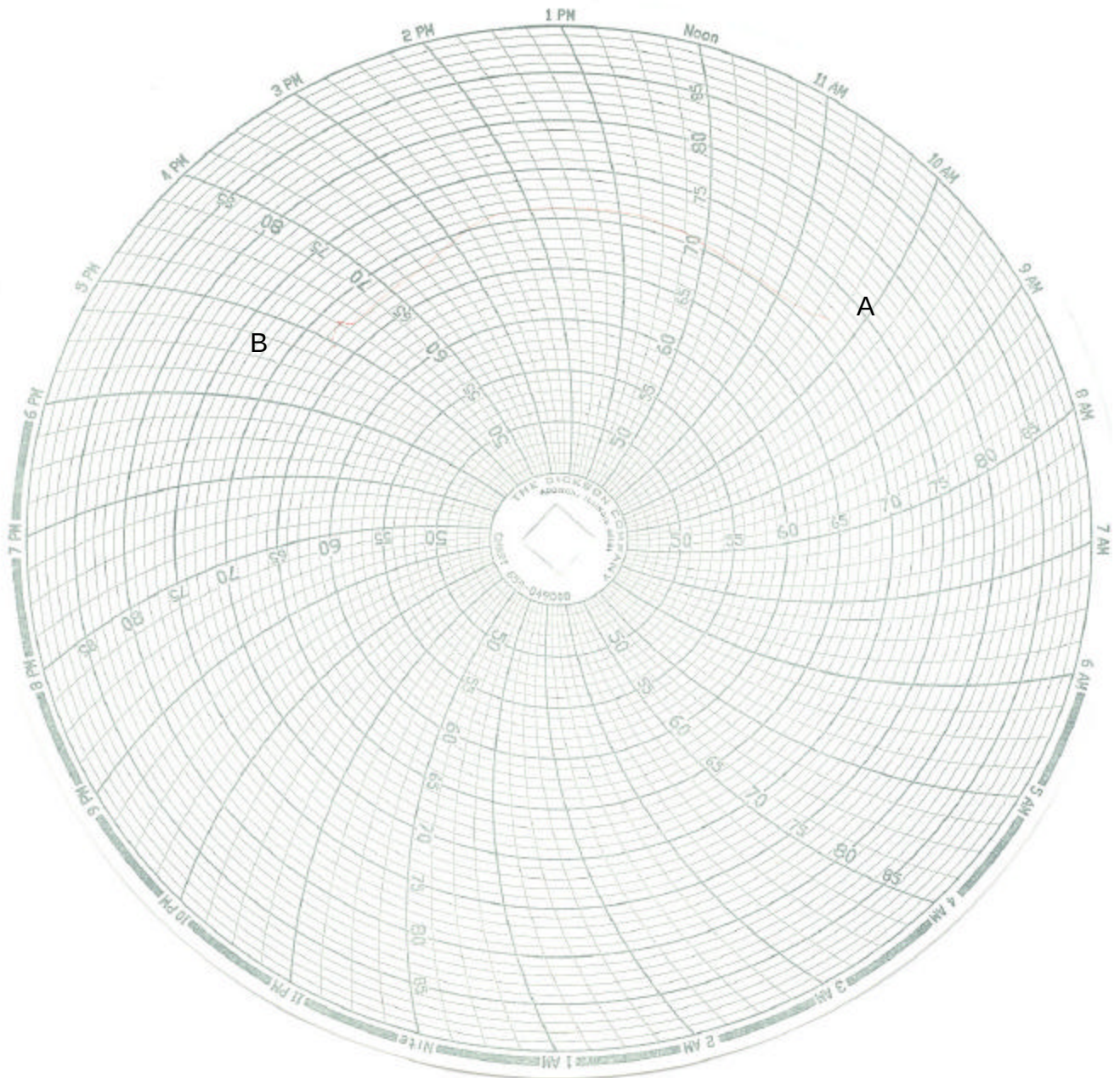
Inspected By: Tim Michnay

Date: 11/8/00

<u>Part</u>	<u>Items Checked</u>	<u>Comments</u>
Skin	visual inspection	OK
Head	visual, ballast, accelerometer mount	OK
Neck	visual, cable torque, nodding blocks	OK
Clavicles	visual, bumpers, range of motion	OK
Arms/Hands	visual, bumpers, range of motion	OK
Spine box	visual, ballast, weldment, accelerometer mount	OK
Rib cage	visual, measure, stiffeners	OK
Sternum	visual, bumpers	OK
Lumbar spine	visual, cable torque	OK
Abdomen	visual	OK
Pelvis	visual, palpate, accelerometer mount	OK
Upper legs	visual, load cell bolts	OK
Knees	visual, stops, inserts, sliders	OK
Lower legs	visual, range of motion	OK
Ankles	visual, range of motion	OK
Feet	visual, range of motion	OK
Joints	1 to 2 g range	OK
Other		

Notes (include component/problem/action/reason):

VEHICLE AND DUMMY TEMPERATURE



A = Dummies installed in vehicle at 10:00 a.m.

B = Test conducted at 5:30 p.m.

APPENDIX D
TEST EQUIPMENT & INSTRUMENTATION CALIBRATION

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION
INSTRUMENTS FOR DUMMY NO. 066

	DRIVER		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Head X	AAMN8	Endevco	8/30/00
Head Y	ACC61	Endevco	8/30/00
Head Z	ACCW9	Endevco	8/30/00
Head X Redundant	AJ621	Endevco	8/30/00
Head Y Redundant	AJ619	Endevco	8/30/00
Head Z Redundant	AHY54	Endevco	8/30/00
Chest X	ACCY1	Endevco	8/30/00
Chest Y	ACCC8	Endevco	8/30/00
Chest Z	ACCT7	Endevco	8/30/00
Chest X Redundant	AJ9D4	Endevco	8/30/00
Chest Y Redundant	AJ9F3	Endevco	8/30/00
Chest Z Redundant	AJ9D9	Endevco	8/30/00
Right Femur Load Cell	F261FZ	Denton	10/16/00
Left Femur Load Cell	F262FZ	Denton	10/16/00
Pelvis X	AHTR2	Endevco	9/19/00
Pelvis Y	AGTE9	Endevco	9/19/00
Pelvis Z	AJ9B0	Endevco	9/19/00

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION

INSTRUMENTS FOR DUMMY NO. 066

	DRIVER		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Neck Load Cell X	N253FX	Denton	10/11/00
Neck Load Cell Y	N253FY	Denton	10/11/00
Neck Load Cell Z	N253FZ	Denton	10/11/00
Neck Moment X	N253MX	Denton	10/11/00
Neck Moment Y	N253MY	Denton	10/11/00
Neck Moment Z	N253MZ	Denton	10/11/00
Chest Deflection Gauge	66	Servo	10/12/00
Lap Belt Load Cell	191	Denton	10/6/00
Shoulder Belt Load Cell	192	Denton	10/6/00

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION
INSTRUMENTS FOR DUMMY NO. 066

	DRIVER		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Upper Right Tibia Moment X	T106MX	Denton	10/11/00
Upper Right Tibia Moment Y	T106MY	Denton	10/11/00
Upper Right Tibia Force Z	T106FZ	Denton	10/11/00
Lower Right Tibia Moment X	A135MX	Denton	10/11/00
Lower Right Tibia Moment Y	A135MY	Denton	10/11/00
Lower Right Tibia Force Z	A135FZ	Denton	10/11/00
Upper Left Tibia Moment X	T109MX	Denton	10/11/00
Upper Left Tibia Moment Y	T109MY	Denton	10/11/00
Upper Left Tibia Force Z	T109FZ	Denton	10/11/00
Lower Left Tibia Moment X	A138MX	Denton	10/11/00
Lower Left Tibia Moment Y	A138MY	Denton	10/11/00
Lower Left Tibia Force Z	A138FZ	Denton	10/11/00
Left Foot Ball Z Acceleration	AHY71	Endevco	6/2/00
Left Heel X Acceleration	AGRW3	Endevco	6/2/00
Left Heel Z Acceleration	AMPY0	Endevco	6/2/00
Right Foot Ball Z Acceleration	J13649	Endevco	6/2/00
Right Heel X Acceleration	J13653	Endevco	6/2/00
Right Heel Z Acceleration	J13713	Endevco	6/2/00

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION
INSTRUMENTS FOR DUMMY NO. 065

	PASSENGER		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Head X	ACCY6	Endevco	10/3/00
Head Y	ACCH1	Endevco	10/3/00
Head Z	AAMW5	Endevco	10/3/00
Head X Redundant	AJ9D2	Endevco	10/3/00
Head Y Redundant	AH1E2	Endevco	10/3/00
Head Z Redundant	AJ7K3	Endevco	10/3/00
Chest X	ACC78	Endevco	10/3/00
Chest Y	ACCE6	Endevco	10/3/00
Chest Z	ACCY3	Endevco	10/3/00
Chest X Redundant	AJ9J7	Endevco	10/3/00
Chest Y Redundant	AJ7A2	Endevco	10/3/00
Chest Z Redundant	AJ819	Endevco	10/3/00
Right Femur Load Cell	F259FZ	Denton	10/13/00
Left Femur Load Cell	F260FZ	Denton	10/13/00
Pelvis X	AM748	Endevco	9/19/00
Pelvis Y	ALCH7	Endevco	9/19/00
Pelvis Z	AALH1	Endevco	9/19/00

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION

INSTRUMENTS FOR DUMMY NO. 065

	PASSENGER		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Neck Load Cell X	N442FX	Denton	6/1/00
Neck Load Cell Y	N442FY	Denton	6/1/00
Neck Load Cell Z	N442FZ	Denton	6/1/00
Neck Moment X	N442MX	Denton	6/1/00
Neck Moment Y	N442MY	Denton	6/1/00
Neck Moment Z	N442MZ	Denton	6/1/00
Chest Deflection Gauge	65	Servo	10/12/00
Lap Belt Load Cell	193	Denton	10/6/00
Shoulder Belt Load Cell	194	Denton	10/4/00

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION
INSTRUMENTS FOR DUMMY NO. 065

	PASSENGER		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Upper Right Tibia Moment X	T103MX	Denton	10/11/00
Upper Right Tibia Moment Y	T103MY	Denton	10/11/00
Upper Right Tibia Force Z	T103FZ	Denton	10/11/00
Lower Right Tibia Moment X	A133MX	Denton	10/11/00
Lower Right Tibia Moment Y	A133MY	Denton	10/11/00
Lower Right Tibia Force Z	A133FZ	Denton	10/11/00
Upper Left Tibia Moment X	T105MX	Denton	10/11/00
Upper Left Tibia Moment Y	T105MY	Denton	10/11/00
Upper Left Tibia Force Z	T105FZ	Denton	10/11/00
Lower Left Tibia Moment X	A134MX	Denton	10/11/00
Lower Left Tibia Moment Y	A134MY	Denton	10/11/00
Lower Left Tibia Force Z	A134FZ	Denton	10/11/00
Left Foot Ball Z Acceleration	AMTL6	Endevco	7/12/00
Left Heel X Acceleration	AMTG3	Endevco	7/12/00
Left Heel Z Acceleration	ALC37	Endevco	7/12/00
Right Foot Ball Z Acceleration	J33394	Endevco	7/12/00
Right Heel X Acceleration	AHYE2	Endevco	5/18/00
Right Heel Z Acceleration	J33415	Endevco	5/18/00

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION

	VEHICLE ACCELEROMETERS		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Left Rear Seat Crossmember X	I14-D13	Entran	8/18/00
Right Rear Seat Crossmember X	F11-G09	Entran	9/14/00
Top of Engine Block X	E10-F18	Entran	7/11/00
Bottom of Engine X	A09-G02	Entran	9/12/00
Left Brake Caliper X	G01-J05	Entran	9/14/00
Right Brake Caliper X	G13-F04	Entran	8/14/00
Instrument Panel X	G13-B14	Entran	9/14/00
Redundant Left Rear Seat Crossmember X	G01-J02	Entran	9/14/00
Redundant Right Rear Seat Crossmember X	F20-G11	Entran	9/14/00

	LABORATORY INSTRUMENTS		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Neck Bending Pendulum Accelerometer	C12885	Endevco	7/12/00
Neck Bending Head Rotary Potentiometer	018	Spectrol	7/12/00
Neck Bending Pendulum Rotary Potentiometer	019	Spectrol	7/12/00
Chest Probe Accelerometer	J14396	Endevco	7/12/00
Knee Impact Accelerometer	J14398	Entran	7/12/00

APPENDIX E
VEHICLE OWNER'S OCCUPANT RESTRAINT
SYSTEM INSTRUCTIONS

SAFETY RESTRAINTS

Personal Safety System

The Personal Safety System provides an improved overall level of frontal crash protection to front seat occupants and is designed to help further reduce the risk of air bag-related injuries. The system is able to analyze different occupant conditions and crash severity before activating the appropriate safety devices to help better protect a range of occupants in a variety of frontal crash situations.

Your vehicle's Personal Safety System consists of:

- Driver and passenger dual-stage air bag supplemental restraints.
- Front safety belts with pretensioners, energy management retractors, and safety belt usage sensors.
- Driver's seat position sensor.
- Passenger occupant classification sensor (if equipped).
- Front crash severity sensor.
- Restraints Control Module (RCM) with impact and safing sensors.
- Restraint system warning light and back-up tone.

Seating and safety restraints

- The electrical wiring for the air bags, crash sensor(s), safety belt pretensioners, front safety belt usage sensors, driver seat position sensor, passenger occupant classification sensor (if equipped), and indicator lights.

How does the personal safety system work?

The Personal Safety System can adapt the deployment strategy of your vehicle's safety devices according to crash severity and occupant conditions. A collection of crash and occupant sensors provides information to the Restraints Control Module (RCM). During a crash, the RCM activates the safety belt pretensioners and/or either one or both stages of the dual-stage air bag supplemental restraints based on crash severity and occupant conditions.

The fact that the pretensioners or air bags did not activate for both front seat occupants in a collision does not mean that something is wrong with the system. Rather, it means the Personal Safety System determined the accident conditions (crash severity, belt usage, etc.) were not appropriate to activate these safety devices. Front air bags and pretensioners are designed to activate only in frontal and near-frontal collisions, not rollovers, side-impacts, or rear-impacts unless the collision causes sufficient longitudinal deceleration.

Driver and passenger dual-stage air bag supplemental restraints

The dual-stage air bags offer the capability to tailor the level of air bag inflation energy. A lower, less forceful energy level is provided for more common, moderate-severity impacts. A higher energy level is used for the most severe impacts. Refer to *Air bag Supplemental Restraints* section in this chapter.

Front crash severity sensor

The front crash severity sensor enhances the ability to detect the severity of an impact. Positioned up front, it provides valuable information early in the crash event on the severity of the impact. This allows your Personal Safety System to distinguish between different levels of crash severity and modify the deployment strategy of the dual-stage air bags and safety belt pretensioners.

Driver's seat position sensor

The driver's seat position sensor allows your Personal Safety System to tailor the deployment level of the driver dual-stage air bag based on seat position. The system is designed to help protect smaller drivers sitting close to the driver air bag by providing a lower air bag output level.

Seating and safety restraints

Passenger occupant classification sensor (if equipped)

Refer to the label located under the passenger seat to verify if your vehicle is equipped with the passenger occupant classification sensor system.

For air bags to do their job they must inflate with great force, and this force can pose a potentially deadly risk to occupants that are very close to the air bag when it begins to inflate. For some occupants, like infants in rear-facing child seats, this occurs because they are initially sitting very close to the air bag. For other occupants, this occurs when the occupant is not properly restrained by seat belts or child safety seats and they move forward during pre-crash braking. The most effective way to reduce the risk of unnecessary injuries is to make sure all occupants are properly restrained. Accident statistics suggest that children are much safer when properly restrained in the rear seating positions than in the front.



Air bags can kill or injure a child in a child seat. **NEVER** place a rear-facing child seat in front of an active air bag. If you must use a forward-facing child seat in the front seat, move the seat all the way back.



Always transport children 12 years old and under in the back seat and always properly use appropriate child restraints.

The passenger occupant classification sensor can automatically turn off the passenger front air bag and side air bag (if equipped). The system is designed to help protect small (child size) occupants from air bag deployments when they are improperly seated or restrained in the front passenger seat contrary to proper child-seating or restraint usage recommendations. Even with this technology, parents are **STRONGLY** encouraged to always properly restrain children in the rear seat. The sensor also turns off the air bag(s) when the passenger seat is empty to prevent unnecessary replacement of the air bag(s) after a collision.

Front safety belt usage sensors

The front safety belt usage sensors detect whether or not the driver and front outboard passenger safety belts are fastened. This information allows your Personal Safety System to tailor the air bag deployment and safety belt pretensioner activation depending upon safety belt usage. Refer to *Safety Belts* section in this chapter.

Seating and safety restraints

Front safety belt pretensioners

The safety belt pretensioners are designed to tighten the safety belts firmly against the occupant's body during a collision. This maximizes the effectiveness of the safety belts and helps properly position the occupant relative to the air bag to improve protection. The safety belt pretensioners can be either activated alone or, if the collision is of sufficient severity, together with the air bags.

Front safety belt energy management retractors

The front safety belt energy management retractors allow webbing to be pulled out of the retractor in a gradual and controlled manner in response to the occupant's forward momentum. This helps reduce the risk of force-related injuries to the occupant's chest by limiting the load on the occupant. Refer to *Safety Belts* section in this chapter.

Determining if the Personal Safety System is operational

The Personal Safety System uses a warning light in the instrument cluster or a back-up tone to indicate the condition of the system. Refer to the *Restraints Warning Light* section in the *Instrumentation* chapter. Routine maintenance of the Personal Safety System is not required.

The Restraints Control Module (RCM) monitors its own internal circuits and the circuits for the air bag supplemental restraints, crash sensor(s), safety belt pretensioners, front safety belt buckle sensors, driver seat position sensor, and passenger occupant classification sensor (if equipped). In addition, the RCM also monitors the restraints warning light in the instrument cluster. A difficulty with the system is indicated by one or more of the following.

- The warning light will either flash or stay lit.
- The warning light will not illuminate immediately after ignition is turned on.
- A series of five beeps will be heard. The tone pattern will repeat periodically until the problem and warning light are repaired.

If any of these things happen, even intermittently, have the Personal Safety System serviced at your dealership or by a qualified technician immediately. Unless serviced, the system may not function properly in the event of a collision.

Seating and safety restraints

Safety restraints precautions



Always drive and ride with your seatback upright and the lap belt snug and low across the hips.



To reduce the risk of injury, make sure children sit where they can be properly restrained.



Never let a passenger hold a child on his or her lap while the vehicle is moving. The passenger cannot protect the child from injury in a collision.



All occupants of the vehicle, including the driver, should always properly wear their safety belts, even when an air bag SRS is provided.



It is extremely dangerous to ride in a cargo area, inside or outside of a vehicle. In a collision, people riding in these areas are more likely to be seriously injured or killed. Do not allow people to ride in any area of your vehicle that is not equipped with seats and safety belts. Be sure everyone in your vehicle is in a seat and using a safety belt properly.



In a rollover crash, an unbelted person is significantly more likely to die than a person wearing a safety belt.



Each seating position in your vehicle has a specific safety belt assembly which is made up of one buckle and one tongue that are designed to be used as a pair. 1) Use the shoulder belt on the outside shoulder only. Never wear the shoulder belt under the arm. 2) Never swing the safety belt around your neck over the inside shoulder. 3) Never use a single belt for more than one person.

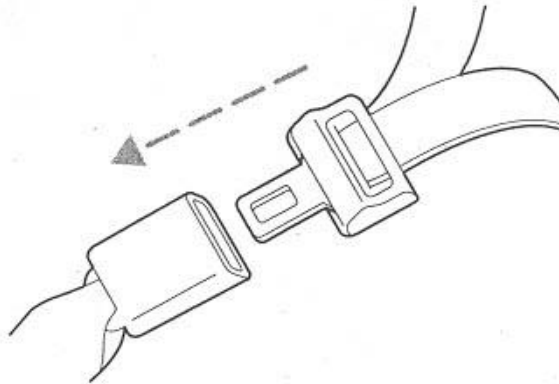


Always transport children 12 years old and under in the back seat and always properly use appropriate child restraints.

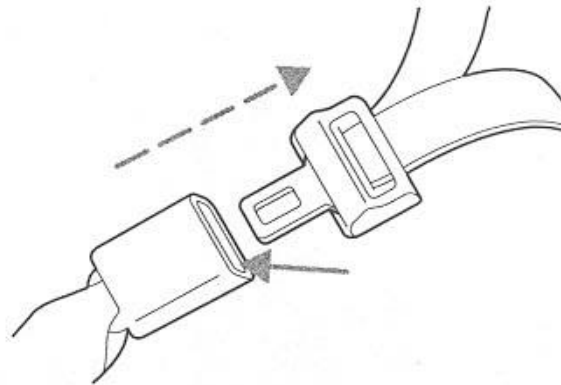
Seating and safety restraints

Combination lap and shoulder belts

1. Insert the belt tongue into the proper buckle (the buckle closest to the direction the tongue is coming from) until you hear a snap and feel it latch. Make sure the tongue is securely fastened in the buckle.



2. To unfasten, push the release button and remove the tongue from the buckle.



The front outboard and rear safety restraints in the vehicle are combination lap and shoulder belts. The front passenger and rear seat safety belts have two types of locking modes described below:

Vehicle sensitive mode

The vehicle sensitive mode is the normal retractor mode, allowing free shoulder belt length adjustment to your movements and locking in response to vehicle movement. For example, if the driver brakes suddenly or turns a corner sharply, or the vehicle receives an impact of approximately 8 km/h (5 mph) or more, the combination safety belts will lock to help reduce forward movement of the driver and passengers.

Automatic locking mode

In this mode, the shoulder belt is automatically pre-locked. The belt will still retract to remove any slack in the shoulder belt.

The automatic locking mode is not available on the driver safety belt.

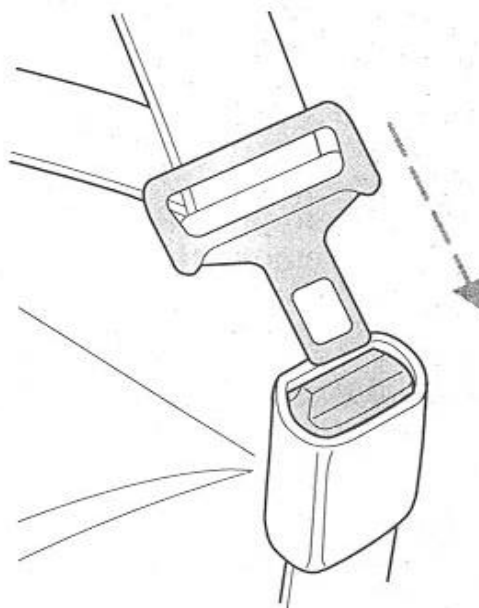
Seating and safety restraints

When to use the automatic locking mode

- **Anytime** a child safety seat is installed in the vehicle. Children 12 years old and under should be properly restrained in the rear seat whenever possible. Refer to *Safety Restraints for Children* or *Safety Seats for Children* later in this chapter.

How to use the automatic locking mode

- Buckle the combination lap and shoulder belt.



- Grasp the shoulder portion and pull downward until the entire belt is extracted.



- Allow the belt to retract. As the belt retracts, you will hear a clicking sound. This indicates the safety belt is now in the automatic locking mode.

Seating and safety restraints

How to disengage the automatic locking mode



Ford recommends that all safety belt assemblies and attaching hardware should be inspected by a qualified technician after any collision. Safety belt assemblies not in use during a collision should also be inspected and replaced if either damage or improper operation is noted.

Disconnect the combination lap/shoulder belt and allow it to retract completely to disengage the automatic locking mode and activate the vehicle sensitive (emergency) locking mode.



After any vehicle collision, the front passenger outboard seat belt system must be checked by a qualified technician to verify that the "automatic locking retractor" feature for child seats is still functioning properly. In addition, all seat belts should be checked for proper function.



BELT AND RETRACTOR ASSEMBLY MUST BE REPLACED if the seat belt assembly "automatic locking retractor" feature or any other seat belt function is not operating properly when checked according to the procedures in Workshop Manual.



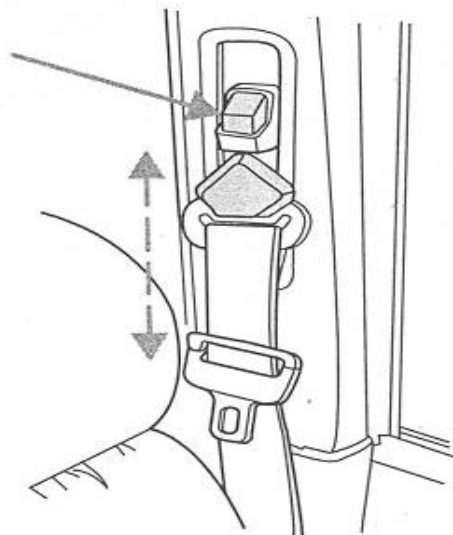
Failure to replace the Belt and Retractor assembly could increase the risk of injury in collisions.

Seating and safety restraints

Front safety belt height adjustment

Your vehicle has safety belt height adjustments for the driver and front passenger. Adjust the height of the shoulder belt so the belt rests across the middle of your shoulder.

To lower the shoulder belt height, push the button and slide the height adjuster down. To raise the height of the shoulder belt, slide the height adjuster up. Pull down on the height adjuster to make sure it is locked in place.



Position the shoulder belt height adjusters so that the belt rests across the middle of your shoulder. Failure to adjust the safety belt properly could reduce the effectiveness of the seat belt and increase the risk of injury in a collision.

Lap belts

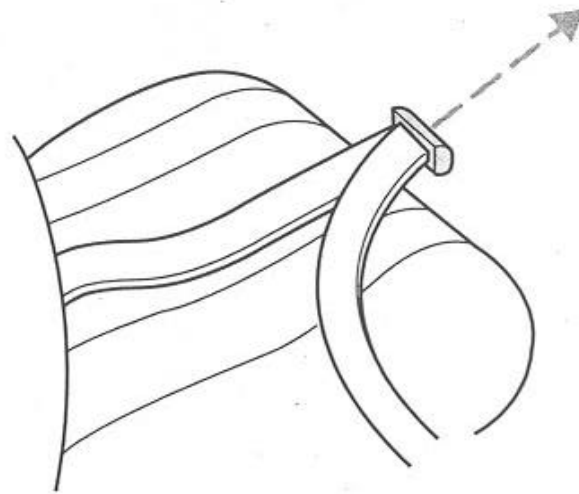
Adjusting the front center seat lap belt (if equipped)



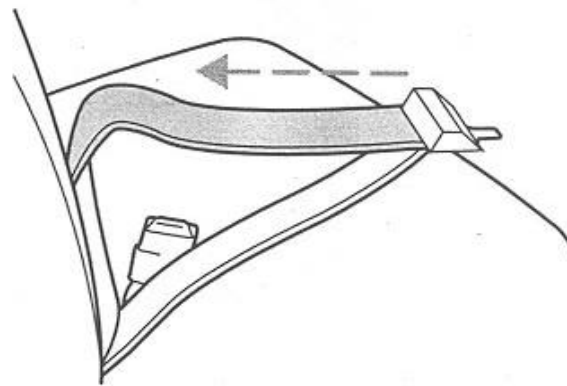
The lap belt should fit snugly and as low as possible around the hips, not across the waist.

Seating and safety restraints

The lap belt does not adjust automatically. Insert the tongue into the correct buckle (the buckle closest to the direction the tongue is coming from). To lengthen the belt, turn the tongue at a right angle to the belt and pull across your lap until it reaches the buckle. To tighten the belt, pull the loose end of the belt through the tongue until it fits snugly across the hips.



Shorten and fasten the belt when not in use.



Safety belt extension assembly

If the safety belt assembly is too short for you, even when fully extended, 20 cm (8 inches) can be added to the safety belt assembly by adding a safety belt extension assembly (part number 611C22). Safety belt extension assemblies can be obtained from your dealer at no cost.

Use only extensions manufactured by the same supplier as the safety belt. Manufacturer identification is located at the end of the webbing on the label. Also, use the safety belt extension only if the safety belt is too short for you when fully extended. Do not use extensions to change the fit of the shoulder belt across the torso.

Safety belt warning light and indicator chime

The seat belt warning light illuminates in the instrument cluster and a chime sounds to remind the occupants to fasten their safety belts.

Seating and safety restraints

Conditions of operation

If...	Then...
The driver's safety belt is not buckled before the ignition switch is turned to the ON position...	The safety belt warning light illuminates 1-2 minutes and the warning chime sounds 4-8 seconds.
The driver's safety belt is buckled while the indicator light is illuminated and the warning chime is sounding...	The safety belt warning light and warning chime turn off.
The driver's safety belt is buckled before the ignition switch is turned to the ON position...	The safety belt warning light and indicator chime remain off.

Belt minder

The Belt Minder feature is a supplemental warning to the safety belt warning function. This feature provides additional reminders to the driver that the driver's safety belt is unbuckled by intermittently sounding a chime and illuminating the safety belt warning lamp in the instrument cluster.

If...	Then...
The driver's safety belt is not buckled before the vehicle has reached at least 5 km/h (3 mph) and 1-2 minutes have elapsed since the ignition switch has been turned to ON...	The Belt Minder feature is activated - the safety belt warning light illuminates and the warning chime sounds for 6 seconds every 30 seconds, repeating for approximately 5 minutes or until safety belt is buckled.
The driver's safety belt is buckled while the safety belt indicator light is illuminated and the safety belt warning chime is sounding...	The Belt Minder feature will not activate.

Seating and safety restraints

If...	Then...
The driver's safety belt is buckled before the ignition switch is turned to the ON position...	The Belt Minder feature will not activate.

The purpose of the Belt Minder is to remind occasional wearers to wear safety belts all of the time.

The following are reasons most often given for not wearing safety belts:
(All statistics based on U.S. data)

Reasons given...	Consider...
"Crashes are rare events"	36 700 crashes occur every day. The more we drive, the more we are exposed to "rare" events, even for good drivers. <i>1 in 4 of us will be seriously injured in a crash during our lifetime.</i>
"I'm not going far"	3 of 4 fatal crashes occur within 25 miles of home.
"Belts are uncomfortable"	Ford designs its safety belts to enhance comfort. If you are uncomfortable - try different positions for the safety belt upper anchorage and seatback which should be as upright as possible; this can improve comfort.
"I was in a hurry"	Prime time for an accident. Belt Minder reminds us to take a few seconds to buckle up.
"Seat belts don't work"	Safety belts , when used properly, reduce risk of death to front seat occupants by 45% in cars , and by 60% in light trucks .
"Traffic is light"	Nearly 1 of 2 deaths occur in single-vehicle crashes , many when no other vehicles are around.

Seating and safety restraints

Reasons given...	Consider...
"Belts wrinkle my clothes"	Possibly, but a serious crash can do much more than wrinkle your clothes, particularly if you are unbelted.
"The people I'm with don't wear belts"	Set the example, teen deaths occur 4 times more often in vehicles with TWO or MORE people. Children and younger brothers/sisters imitate behavior they see.
"I have an air bag"	Air bags offer greater protection when used with safety belts. Frontal airbags are not designed to inflate in rear and side crashes or rollovers.
"I'd rather be thrown clear"	Not a good idea. People who are ejected are 40 times more likely to DIE . Safety belts help prevent ejection, WE CAN'T "PICK OUR CRASH".

 Do not sit on top of a buckled safety belt to avoid the Belt Minder chime. Sitting on the safety belt will increase the risk of injury in an accident. To disable (one-time) or deactivate the Belt Minder feature please follow the directions stated below.

One time disable

Anytime the safety belt is buckled and then unbuckled during an ignition ON cycle, Belt Minder will be disabled for that ignition cycle only.

Deactivating/activating the belt minder feature

Read steps 1 - 9 thoroughly before proceeding with the deactivation/activation programming procedure.

The Belt Minder feature can be deactivated/activated by performing the following procedure:

Before following the procedure, make sure that:

- the parking brake is set
- the gearshift is in P (Park) (automatic transmission).

Seating and safety restraints

- the ignition switch is in the OFF position
- all vehicle doors are closed
- the driver's safety belt is unbuckled
- the parklamps/headlamps are in OFF position (If vehicle is equipped with Autolamps, this will not affect the procedure.)



To reduce the risk of injury, do not deactivate/activate the Belt Minder feature while driving the vehicle.

1. Turn the ignition switch to the RUN (or ON) position. (DO NOT START THE ENGINE)
2. Wait until the safety belt warning light turns off. (Approximately 1–2 minutes)
 - Steps 3–5 must be completed within 60 seconds or the procedure will have to be repeated.
3. Buckle then unbuckle the safety belt three times, ending with the safety belt unbuckled. This can be done before or during Belt Minder warning activation.
4. Turn on the parklamps/headlamps, turn off the parklamps/headlamps.
5. Buckle then unbuckle the safety belt three times, ending with the safety belt unbuckled.
 - After step 5 the safety belt warning light will be turned on for three seconds.
6. Within seven seconds of the safety belt warning light turning off, buckle then unbuckle the safety belt.
 - This will disable Belt Minder if it is currently enabled, or enable Belt Minder if it is currently disabled.
7. Confirmation of disabling Belt Minder is provided by flashing the safety belt warning light four times per second for three seconds.
8. Confirmation of enabling Belt Minder is provided by flashing the safety belt warning light four times per second for three seconds, followed by three seconds with the safety belt warning light off, then followed by flashing the safety belt warning light four times per second for three seconds again.
9. After receiving confirmation, the deactivation/activation procedure is

Seating and safety restraints

Safety belt maintenance

Inspect the safety belt systems periodically to make sure they work properly and are not damaged. Inspect the safety belts to make sure there are no nicks, wears or cuts, replacing if necessary. All safety belt assemblies, including retractors, buckles, front seat belt buckle assemblies, buckle support assemblies (slide bar-if equipped), shoulder belt height adjusters (if equipped), shoulder belt guide on seatback (if equipped), child safety seat tether bracket assemblies (if equipped), and attaching hardware, should be inspected after a collision. Ford recommends that all safety belt assemblies used in vehicles involved in a collision be replaced. However, if the collision was minor and a qualified technician finds that the belts do not show damage and continue to operate properly, they do not need to be replaced. Safety belt assemblies not in use during a collision should also be inspected and replaced if either damage or improper operation is noted.

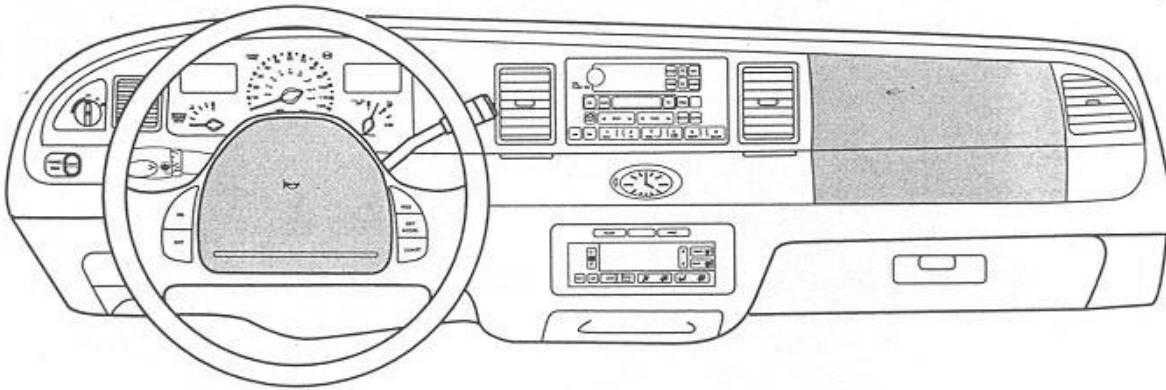


Failure to inspect and if necessary replace the safety belt assembly under the above conditions could result in severe personal injuries in the event of a collision.

Refer to *Cleaning and maintaining the safety belts* in the *Maintenance and care* section.

Seating and safety restraints

AIR BAG SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

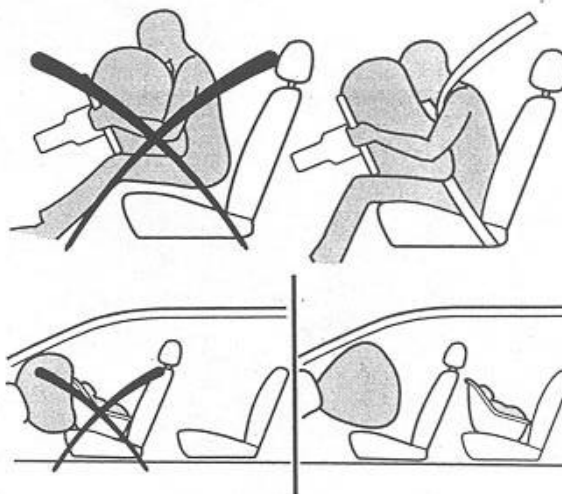


Your vehicle is equipped with a crash sensing and diagnostic module which records information about the air bag and sensor systems. In the event of a collision this module may save information related to the collision including information about the air bag system and impact severity. This information will assist Ford in the servicing of your vehicle and may help Ford better understand real world collisions and further improve the safety of future vehicles.

Important supplemental restraint system (SRS) precautions

The supplemental restraint system is designed to work with the safety belt to help protect the driver and right front passenger from certain upper body injuries.

Air bags DO NOT inflate slowly or gently and the risk of injury from a deploying air bag is greatest close to the trim covering the air bag module.



All occupants of the vehicle, including the driver, should always properly wear their safety belts, even when an air bag SRS is provided.

Seating and safety restraints



Always transport children 12 years old and under in the back seat and always properly use appropriate child restraints.



National Highway Traffic Safety Administration (NHTSA) recommends a minimum distance of at least 25 cm (10 inches) between an occupant's chest and the driver air bag module.



Never place your arm over the air bag module as a deploying air bag can result in serious arm fractures or other injuries.

Steps you can take to properly position yourself away from the air bag:

- Move your seat to the rear as far as you can while still reaching the pedals comfortably.
- Recline the seat slightly (one or two degrees) from the upright position.



Do not put anything on or over the air bag module. Placing objects on or over the air bag inflation area may cause those objects to be propelled by the air bag into your face and torso causing serious injury.



Do not attempt to service, repair, or modify the Air Bag Supplemental Restraint System or its fuses. See your Ford or Lincoln Mercury dealer.



Modifications to the front end of the vehicle, including frame, bumper, front end body structure and tow hooks may effect the performance of the air bag sensors increasing the risk of injury. Do not modify the front end of the vehicle.

Seating and safety restraints

Children and air bags

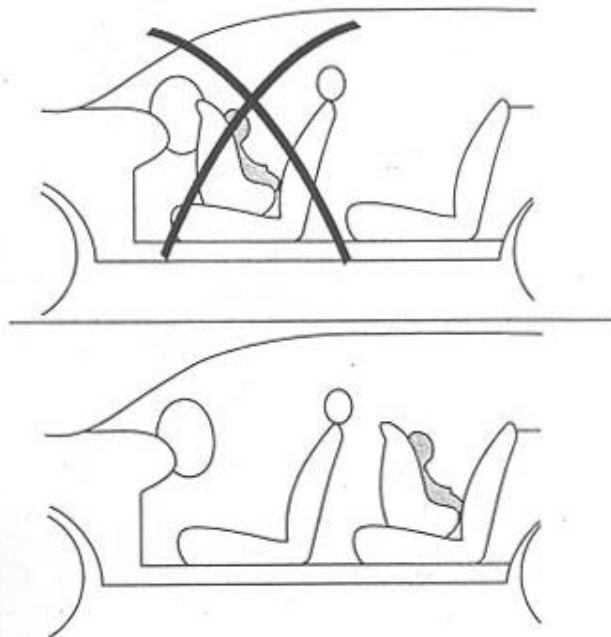
For additional important safety information, read all information on safety restraints in this guide.

Children must always be properly restrained. Accident statistics suggest that children are safer when properly restrained in the rear seating positions than in the front seating position. Failure to follow these instructions may increase the risk of injury in a collision.



Air bags can kill or injure a child in a child seat.

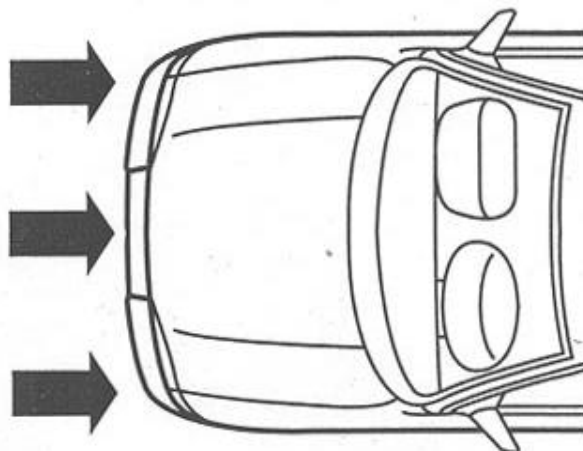
NEVER place a rear-facing child seat in front of an active air bag. If you must use a forward-facing child seat in the front seat, move the seat all the way back.



How does the air bag supplemental restraint system work?

The air bag SRS is designed to activate when the vehicle sustains longitudinal deceleration sufficient to cause the sensors to close an electrical circuit that initiates air bag inflation.

The fact that the air bags did not inflate in a collision does not mean that something is wrong with the system. Rather, it means the forces were not of the type sufficient to cause activation. Front air bags are designed to inflate in frontal and near-frontal collisions, not rollover, side-impact, or rear-impacts unless the collision causes sufficient longitudinal deceleration.



Seating and safety restraints

The air bags inflate and deflate rapidly upon activation. After air bag deployment, it is normal to notice a smoke-like, powdery residue or smell the burnt propellant. This may consist of cornstarch, talcum powder (to lubricate the bag) or sodium compounds (e.g., baking soda) that result from the combustion process that inflates the air bag. Small amounts of sodium hydroxide may be present which may irritate the skin and eyes, but none of the residue is toxic.



While the system is designed to help reduce serious injuries, contact with a deploying air bag may also cause abrasions, swelling or temporary hearing loss. Because air bags must inflate rapidly and with considerable force, there is the risk of death or serious injuries such as fractures, facial and eye injuries or internal injuries, particularly to occupants who are not properly restrained or are otherwise out of position at the time of air bag deployment. Thus, it is extremely important that occupants be properly restrained as far away from the air bag module as possible while maintaining vehicle control.



Several air bag system components get hot after inflation. Do not touch them after inflation.



If the air bag has deployed, **the air bag will not function again and must be replaced immediately.** If the air bag is not replaced, the unrepaired area will increase the risk of injury in a collision.

The SRS consists of:

- driver and passenger air bag modules (which include the inflators and air bags).
- side air bags (if equipped). Refer to *Side air bag system* later in this chapter.
- one or more impact and safing sensors.

Seating and safety restraints

- a readiness light and tone.
- diagnostic module.
- and the electrical wiring which connects the components.

The diagnostic module monitors its own internal circuits and the supplemental air bag electrical system warning (including the impact sensors), the system wiring, the air bag system readiness light, the air bag back up power and the air bag ignitors.

Determining if the system is operational

The SRS uses a readiness light in the instrument cluster or a tone to indicate the condition of the system. Refer to the *Air bag readiness* section in the *Instrumentation* chapter. Routine maintenance of the air bag is not required.

A difficulty with the system is indicated by one or more of the following:

- The readiness light will either flash or stay lit.
- The readiness light will not illuminate immediately after ignition is turned on.
- A series of five beeps will be heard. The tone pattern will repeat periodically until the problem and/or light are repaired.

**AIR
BAG**

If any of these things happen, even intermittently, have the SRS serviced at your dealership or by a qualified technician immediately. Unless serviced, the system may not function properly in the event of a collision.

Side air bag system (if equipped)



Do not place objects or mount equipment on or near the air bag cover on the side of the seatbacks of the front seats or in front seat areas that may come into contact with a deploying air bag. Failure to follow these instructions may increase the risk of personal injury in the event of a collision.



Do not use accessory seat covers. The use of accessory seat covers may prevent the deployment of the side air bags and increase the risk of injury in an accident.

Seating and safety restraints



Do not lean your head on the door. The side air bag could injure you as it deploys from the side of the seatback.



Do not attempt to service, repair, or modify the air bag Supplemental Restraint System, its fuses or the seat cover on a seat containing an air bag. See your Ford or Lincoln Mercury dealer.

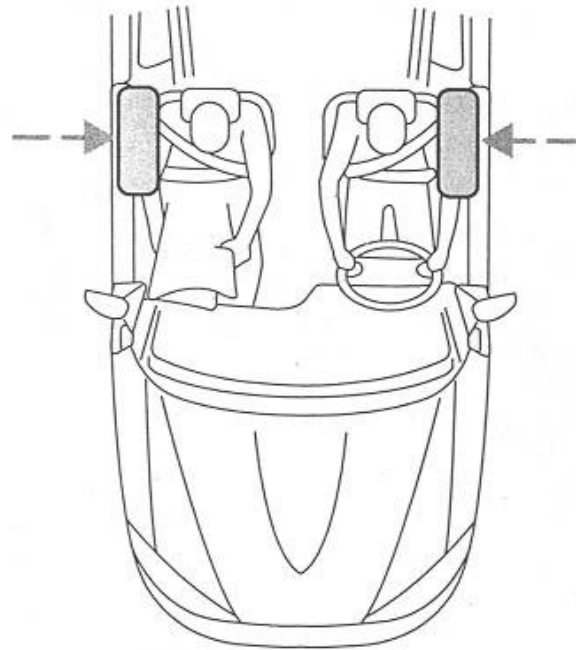


All occupants of the vehicle including the driver should always wear their safety belts even when an air bag SRS is provided.

How does the side air bag system work?

The side air bag system consists of the following:

- An inflatable nylon bag (air bag) with a gas generator concealed behind the outboard bolster of the driver and front passenger seatbacks.
- A special seat cover designed to allow airbag deployment.
- The same warning light, electronic control and diagnostic unit as used for the front air bags.
- Two crash sensors located under the outboard side of the front seats, attached to the floor.



Side air bags, in combination with seat belts, can help reduce the risk of severe injuries in the event of a significant side impact collision.

The side air bags are fitted on the outboard side of the seatbacks of the front seats. In certain lateral collisions, the air bag on the side affected by the collision will be inflated, even if the respective seat is not occupied. The air bag was designed to inflate between the door panel and occupant to further enhance the protection provided occupants in side impact collisions.

Seating and safety restraints

The air bag SRS is designed to activate when the vehicle sustains lateral deceleration sufficient to cause the sensors to close an electrical circuit that initiates air bag inflation.

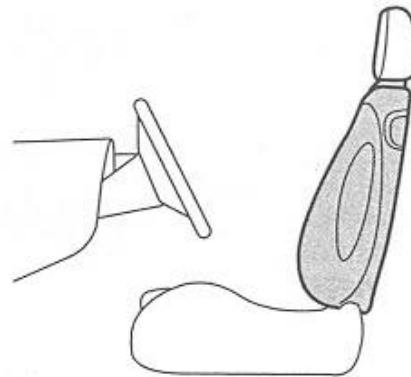
The fact that the air bags did not inflate in a collision does not mean that something is wrong with the system. Rather, it means the forces were not of the type sufficient to cause activation. Side air bags are designed to inflate in side-impact collisions, not roll-over, rear-impact, frontal or near-frontal collisions, unless the collision causes sufficient lateral deceleration.



Several air bag system components get hot after inflation. Do not touch them after inflation.



If the side air bag has deployed, **the air bag will not function again. The side air bag system (including the seat) must be inspected and serviced by a qualified technician in accordance with the vehicle service manual.** If the air bag is not replaced, the unrepaired area will increase the risk of injury in a collision.



Determining if the system is operational

The SRS uses a readiness light in the instrument cluster or a tone to indicate the condition of the system. Refer to the *Air bag readiness* section in the *Instrumentation* chapter. Routine maintenance of the air bag is not required.

A difficulty with the system is indicated by one or more of the following:

- The readiness light (same light as for front air bag system) will either flash or stay lit.
- The readiness light will not illuminate immediately after ignition is turned on.

Seating and safety restraints

- A series of five beeps will be heard. The tone pattern will repeat periodically until the problem and light are repaired.

If any of these things happen, even intermittently, have the SRS serviced at your dealership or by a qualified technician immediately. Unless serviced, the system may not function properly in the event of a collision.

Disposal of air bags and air bag equipped vehicles (including pretensioners)

For disposal of air bags or air bag equipped vehicles, see your local dealership or qualified technician. Air bags **MUST BE** disposed of by qualified personnel.